AD 297 410

PHILCO CORPORATION — Western Development Laboratories

In reply cite: 614-3-181
RWB/KRO/tmb
28 February 1963

10

SUBJECT: Contract AF04(695)-278
Submission of Technical Report WDL-TR2015
As a deliverable item

TO: Commander
Space Systems Division
Air Force Systems Command
United States Air Force
Air Force Unit Post Office
Los Angeles 45, California

ATTENTION: Technical Data Center

INFO COPIES: ASTIA, Arlington, Virginia (2 copies)
D. Cowart, CSD #3 (1 copy)
T. R. Tremper, AFSSD/SSOCK (w/o enclosure)

REFERENCE: (a) Contract AF04(695)-278, Exhibit "C", Section II
(b) AFBM 58-1, Para. 2.1

In accordance with the requirements of references (a), and (b), we are forwarding ten (10) copies of the following document:

Title	No. and Date
Program Test Plan for Multiple Satellite Augmentation - Phase A	WDL-TR2015 28 February 1963

PHILCO CORPORATION
Western Development Laboratories

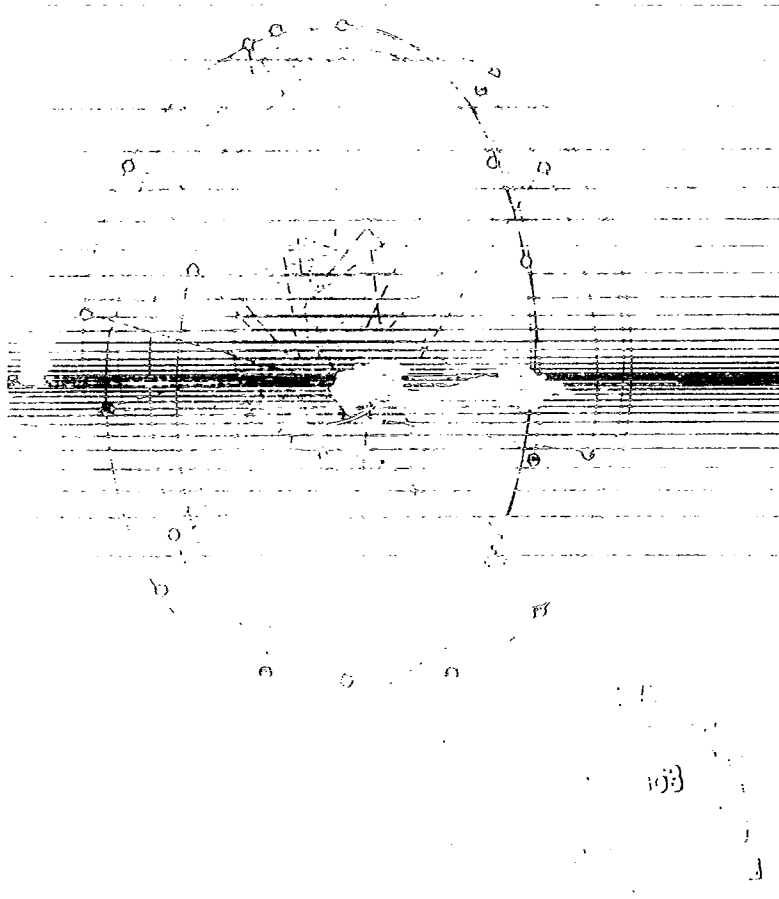
R. W. Boyd

R. W. Boyd
Manager, Contracts Management

WDL-TR2015

TECHNICAL OPERATING REPORT

28 FEBRUARY 1963



PROGRAM TEST PLAN FOR MULTIPLE SATELLITE AUGMENTATION - PHASE A

PREPARED FOR

AIR FORCE SPACE SYSTEMS DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
INGLEWOOD, CALIFORNIA

CONTRACT AF04(695) -278

PHILCO WESTERN DEVELOPMENT LABORATORIES
PALO ALTO, CALIFORNIA

TECHNICAL OPERATING REPORT

PROGRAM TEST PLAN FOR MULTIPLE SATELLITE AUGMENTATION-PHASE A

Prepared by

PHILCO CORPORATION
Western Development Laboratories
Palo Alto, California

Contract AF04(695)-278

Prepared for

SPACE SYSTEMS DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
Inglewood, California

ABSTRACT

PHILCO WDL-TR2015 UNCLASSIFIED
PROGRAM TEST PLAN
FOR MULTIPLE SATELLITE 52 pages
AUGMENTATION - PHASE A AF04(695)-113

This report outlines the types and preferred sequence of tests for the MSAP Phase A equipment configuration and applies to component testing through Phase IV A Testing, which is conducted on subsystems.

Phase III and Phase IV A tests as specified in this plan apply to Thule Tracking Station, New Hampshire Station, North Pacific Station, Vandenberg Tracking Station, and Hawaii Tracking Station where applicable.

THIS UNCLASSIFIED ABSTRACT IS DESIGNED FOR RETENTION IN A STANDARD 3-BY-5 CARD-SIZE FILE, IF DESIRED. WHERE THE ABSTRACT COVERS MORE THAN ONE SIDE OF THE CARD, THE ENTIRE RECTANGLE MAY BE CUT OUT AND FOLDED AT THE DOTTED CENTER LINE. (IF THE ABSTRACT IS CLASSIFIED, HOWEVER, IT MUST NOT BE REMOVED FROM THE DOCUMENT IN WHICH IT IS INCLUDED.)

FOREWORD

This Technical Operating Report describes the Contractor - Proposed Program Test Plan for the Multiple Satellite Augmentation Program, Phase "A", in compliance with Paragraph 2.1 of AFBM Exhibit 58-1, "Contractor Reports Exhibit," dated 1 October 1959, as revised and amended and Exhibit "C", Section II, of Letter Contract AF04(695)-278.

TABLE OF CONTENTS

LIST OF TABLES

SECTION 1
INTRODUCTION

1.1 PURPOSE

This plan outlines the types and preferred sequence of tests for the MSAP Phase A equipment configuration and applies to component testing through Phase IV A which is conducted on subsystems. The completion of Phase IV A testing, which consists of interface tests of Philco WDL Contractor-furnished subsystems, will complete associate contractor obligations.

Phase III and Phase IV A tests as specified in this plan apply to Thule Tracking Station (TTS), New Hampshire Station (NHS), North Pacific Station (NPS), Vandenberg Tracking Station (VTS), and Hawaii Tracking Station (HTS) where applicable.

Phase IV tests scheduled after the completion of Phase IV A are the responsibility of the integrating contractor and of necessity will require an individual test plan for each station.

1.2 DESCRIPTION

This plan includes verification of functional parameters for equipment defined as subsystems within this program. The subsystems and applicable sites are as follows:

Radar Tracking Subsystem - TTS, NHS, FGS, VTS.
200-MC Autotrack Antenna Subsystem - TTS, FGS
FM/FM Telemetry Ground Station Subsystem - TTS, NHS, FGS, VTS
Data Handling Subsystem - TTS, NHS, FGS, VTS, HTS
Control and Display Subsystem - TTS, NHS, FGS, VTS, HTS
Timing Subsystem - TTS, NHS, FGS, VTS, HTS
Communications Subsystem - TTS, FGS
Checkout Subsystem - TTS, NHS, FGS, VTS

1.3 OBJECTIVES

The tests specified in this plan will be conducted to verify and demonstrate that the subsystems, delivered under this program, meet the requirements of the applicable subsystem specifications.

1.4 TEST PHILOSOPHY

For the purpose of this plan, tests required to accomplish the objectives of this program have been categorized into Component and Equipment Testing; Subsystem Acceptance Testing; Phase III Tests; and Phase IV A Tests.

1.4.1 Component and Equipment Testing

1. Receiving Inspection. Tests of incoming components and raw material shall consist of identification of material by comparison of its properties or attributes with documented requirements as reflected in specification control drawings, purchase specifications, vendor specifications, or purchase order descriptions. Visual and mechanical tests shall be performed to assure that quality of finishes, dimensions, materials, and mechanical functions comply with documented requirements.

Electrical tests, where applicable, will be performed to assure electrical quality and characteristics comply with documented requirements.

Records will be maintained to show:

a. Tests performed

b. Test conditions

c. Test results

d. Compliance or non-compliance

e. Disposition of tested items

f. Test instrument calibration status

g. Pertinent test procedures (references to WDL QA manual)

h. Material trouble and failure reports

2. Tests of Purchased Equipment

Material shall be identified by nomenclature, model, serial number and manufacturer, and compared with documented requirements.

Visual and mechanical tests of the equipment will be performed to assure freedom from defects and shipping damage, and to determine that finishes, dimensions and materials meet requirements of the specifications against which the equipment was purchased.

Performance tests will be conducted to assure that the equipment meets the electrical and mechanical performance requirements of the specifications against which the equipment was purchased.

Environmental tests for performance under conditions of abnormal temperatures, vibration, or mechanical shock will be performed where the need for such testing is specified.

Records will be maintained to show:

a. Tests performed

b. Test conditions

c. Test results

d Compliance or non-compliance

e. Disposition of tested items

f. Test instrument calibration status

g. Pertinent test procedures (references to WDL QA manual)

3. Development Tests of Engineering Models

Electrical bench tests will be performed to determine whether equipment complies with the performance goals established in the equipment specifications.

Temperature tests will be performed as required to assure that the equipment will meet its performance goals under abnormal temperature conditions, especially in the case of equipment containing semi-conductor devices.

Engineering models and prototypes of final design will be submitted to vibration, shock, and other pertinent mechanical tests to assure that they will withstand shipping and operating stresses safely.

4. Fabrication Tests

Fabricated material will be inspected to prints to assure correct materials, dimensions and finishes, as well as to assure excellence of craftsmanship.

Electrical continuity tests, where applicable, will be performed to verify wiring accuracy and disclose gross defects prior to functional testing.

Functional tests at unit level, covering electrical and mechanical operation of the equipment, will be performed on each piece of equipment at unit level. Whenever possible, these tests will include criteria pertinent to acceptance tests of completed equipment. However, it is recognized that much of the unit level equipment requires support of

other equipment at the same level if the A. T. requirements are to be met and that it is more economical to apply A. T. criteria during group level tests.

Functional tests at group level will be performed on each group of mutually supporting units which is capable of normal operation without the support of other equipment.

Records will be maintained to show:

a. Tests performed

b. Test conditions

c. Test results

d. Retests, if performed

e. List of test equipment used, with calibration dates

1.4.2 Acceptance Tests

1. Equipment Acceptance Tests

Acceptance tests to be performed on equipment as required by the acceptance test specification will be performed following successful completion of the functional tests outlined in Paragraph 1.4.1(4)

2. Subsystem Acceptance Tests

Acceptance tests performed on complete subsystems will be performed in accordance with the criteria contained in the applicable subsystem specification. In the event that subsystem acceptance tests are not completed before shipment, the remaining portions of the acceptance tests shall be completed on site prior to Phase III.

Records will be maintained to show the following:

a. Test performed

b. Test conditions

c. Test results

d. Lists of test equipment used,including calibration dates.

Copies of the subsystem acceptance test data sheets will accompany each subsystem to its destination, and other copies will be forwarded to the destination through routine channels.

1.4.3 Phase I and II Tests

Incoming inspection of items delivered to the sites will follow the procedures outlined in Paragraph 1.4.1(1). Installation Tests and inspection will be performed on site to assure correct assembly and wiring of every subsystem to be activated. Tests will include, but not be limited to, wiring continuity and mechanical tests for correctness of assembly and workmanship.

Turn-on tests will be performed to determine that the equipment is in good operating condition and not degraded by shipment, handling, and installation.

A detailed site survey is a prerequisite to Phase III. The site survey shall provide first order accuracy of the following information:

1. All antennas' latitude and longitude

2. All boresight antennas' latitude and longitude

3. Boresight antennas' azimuth and elevation calibration from "user" antenna subsystems.

4. Antenna height above ground level

5. "User" antenna azimuth and elevation from each applicable boresight

6. Obscura profiles referenced to each antenna subsystem

A local geocentric earth radius (and inclination of the local gravity vector from above the radius vector) determination shall be made as a prerequisite to Phase V testing for all tracking antenna subsystems. Accuracy requirements for this determination are second order. Results of the above survey shall be published in the Subsystem Data Book.

1.4.4 Phase III Tests

In the event that planned acceptance tests or portions thereof are not completed at the vendor's or contractor's plants, the tests shall be completed on-site during the Phase III period. These tests shall be performed during this period in addition to the tests specified in the normal Phase III procedures.

The Phase III checkout is verification of all signal and control functions of the MSAP equipment. It includes the tie-in of command and control and special equipment of other subsystems that are required to validate the characteristics of the subsystem under test. This checkout will be accomplished in accordance with Phase III procedures prepared by Philco WDL. Philco WDL is responsible for successful completion of this phase.

1.4.5 Phase IV A Tests

Phase IV A tests will consist of testing the interface of all subsystems furnished under this program. Maximum use will be made of computer diagnostic and maintenance programs. During Phase IV A the Computer Operational Program will be debugged and validated.

The end product of all tests is to insure that equipment furnished meets the specifications and that sufficient data is provided to the Air Force as evidence that subsystems purchased under the Multiple Satellite Augmentation Program have complied with the contractual design criteria and/or the subsystem specifications.

1.4.6 Compatibility Testing

Initial compatibility integration, confidence and evaluation tests of the MSAP equipment and system are to be conducted at TTS. The selection of TTS is based upon delivery schedules and availability of trained personnel and operable equipment. The requirements for the TTS tests are based on the necessity of early completion of any development effort as related to compatibility and integration of MSAP equipment. Results from these tests will be used to minimize installation-to-operation time at succeeding stations.

1.4.7 Test Responsibility

A Philco WDL Test Supervisor will be responsible for conducting Phase III and Phase IV A Tests. He will have the authority to substitute test equipment or simulation equipment when necessary and to change test procedures or substitute new procedures with the concurrence of official witnesses. The test supervisor will be responsible for insuring that all test results are properly documented and that a "Trouble and Failure Report" (WDL Form 151) is completed for any component, equipment, or subsystem which fails or with which trouble is encountered. It shall be the responsibility of the Philco WDL Test Supervisor to provide test data results to Subsystem Engineering and other cognizant departments within WDL.

1.4.8 Test Witnesses

Subsystem acceptance tests, Phase III, and Phase IV A tests will be witnessed by the following or their alternate so designated:

1. Philco WDL Product Assurance Representative

2. Air Force QC Representative

3. SSOCD Representative

4. Aerospace Satellite Control Office Representative

5. Integrating Contractor Representative

The Philco WDL Product Assurance Representative will witness all tests. Other officially designated witnesses shall be notified in advance of a scheduled test. Signatures of all official witnesses (a minimum list to be furnished by AFSSD) present during the test shall constitute complete official witnessing. In addition to test witness signatures, the data sheets will be signed by the Philco WDL Test Supervisor.

SECTION 2

APPLICABLE DOCUMENTS

2.1 GENERAL

All documents listed herein are considered compliance documents except as otherwise noted. SSD Exhibit 62-153 will be used as a guide.

2.2 DESIGN CRITERIA (GUIDE)

TOR-930(2110)-2 Precision S-Band Tracking Radar Subsystem

TOR-930(2110)-3 Telemetry Subsystem

TOR-930(2110)-4 VHF Telemetry Tracking Subsystem

TOR-930(2110)-5 Control and Display Subsystem

TOR-930(2110)-6 Inter-Station Communication Subsystem

TOR-930(2110)-7 Re-issue A Checkout Subsystem

TOR-169(3110)-3 Data Subsystem

TOR-930(2110)-9 Timing Subsystem

2.3 MILITARY SPECIFICATIONS

MIL-E-4158B "Electronic Equipment, Ground, General Requirements for" (Guide)

MIL-Q-5923C "Quality Control Requirements, General"

MIL-I-26600 "Interference Control Requirements, Aeronautical Equipment" (Guide)

MIL-Q-9858 "Quality Control System Requirements"

Bulletin No. 520 (USAF) "Calibration and Certification of Measuring and Testing Equipment"

2.4 WDL DOCUMENTS

2.4.1 Subsystem Specifications

The following specifications, including the current amendments and revisions, are applicable:

98-2043-09 Radar Tracking Subsystem (unclassified)

98-2043-09 Appendix A, Radar Tracking Subsystem (confidential)

98-2045-09 FM/FM Telemetry Ground Station (unclassified)

98-2046-09 Data Handling Subsystem (unclassified)

98-2047-09 Timing Subsystem (unclassified)
98-2048-09 Control and Display Subsystem (unclassified)
98-2049-09 Checkout Subsystem (unclassified)
98-2050-09 Communications Subsystem NPS (unclassified)
98-2073-09 200-MC Tracking Antenna Subsystem (unclassified)
98-2079-09 Communications Subsystem TTS (unclassified)

2.4.2 Technical Reports

TR 1904 Data Subsystem Diagnostic and Maintenance Computer Programs, Multiple Satellite Augmentation Program
Computer Milestone IV (to be published)
Computer Milestone V (to be published)
Computer Milestone VI (to be published)
Computer Milestone VII (to be published)

SECTION 3
SUBSYSTEM ACCEPTANCE TESTS

3.1 GENERAL

The subsystem acceptance test will include the testing of pertinent specification parameters listed in the subsystem performance specification. A subsystem acceptance test requirement, which will be a portion of the subsystem specification, for each subsystem will be submitted to AFSSD for their approval 30 days before the scheduling of the subsystem acceptance test. The acceptance test requirements will: (1) define the parameters and give the tolerance of the specification to be tested; (2) define the test with a block diagram; (3) list the necessary test and simulation equipment; and (4) explain if necessary, how the test will accomplish the intended purpose. Detailed test procedures will be available for the purpose of conducting acceptance tests.

3.2 RADAR TRACKING SUBSYSTEM

The radar will be tested as a portion of the subsystem at the subcontractors' plant. The test will be complete except for boresight equipment tests and other tests necessitated by addition of later equipment modifications. The boresight equipment will be tested at WDL. The boresight-radar integration tests will be conducted on-site. Tests of the radome will be mechanical in nature. No radome-radar interface tests are planned. Table 3-1* lists the subsystem acceptance test parameters to be tested and provides a cross reference between Aerospace Design Criteria, Subsystem Specification, Subsystem Acceptance Test, I & C Phase III Test Procedures, and Diagnostic Computer Programming.

3.3 200-MC AUTOTRACK ANTENNA SUBSYTEM

The 200-MC Autotrack Antenna Subsystem will be tested at the subcontractors' plant using Philco WDL-supplied boresight equipment. Table 3-2 lists the subsystem acceptance test parameters to be tested andprovides a cross reference between the Aerospace Design Criteria, Subsystem Specification, Subsystem Acceptance Test, I & C Phase III Test Procedures, and Diagnostic Computer Programming.

* Tables 3-1 through 3-7 are included in Appendix A of this report.

3.4 FM/FM TELEMETRY GROUND STATION SUBSYSTEM

Barring the emergency action of the subcontractor shipping short the Decomms, the complete subsystem acceptance tests for the FM/FM Telemetry Ground Station Subsystem will be conducted at Philco WDL. Table 3-3 lists the subsystem acceptance test parameters to be tested and provides a cross-reference between the Aerospace Design Criteria, Subsystem Specification, Subsystem Acceptance Test, I & C phase III Test Procedures, and Diagnostic Computer Programming.

3.5 DATA HANDLING SUBSYSTEM

The Data Handling Subsystem will be completely acceptance tested at Philco WDL using computing equipment and diagnostic computer routines. The computer will be tested with CDC-supplied programs before the start of the subsystem acceptance tests. The subsystem acceptance test will be conducted on the building block principal; i.e., the IOB and the computer will be interfaced, then the SOC will be interfaced to this combination, etc. The diagnostic programs will be debugged as a part of the subsystem acceptance test. The communications lines, antenna outputs, TLM inputs, etc., will be simulated. Table 3-4 lists the subsystem acceptance test parameters to be tested and provides a cross-reference between the Aerospace Design Criteria, Subsystem Specification, Subsystem Acceptance Tests, I & C Phase III Test Procedures, and Diagnostic Computer Programming.

3.6 CONTROL AND DISPLAY SUBSYSTEM

The Control and Display Subsystem will be written so that the station operators console (SOC) can be completely and independently tested as a portion of the Control and Display Subsystem at WDL. The station program board will be handled in the same manner. Because of the nature of the slave data link equipment, the subsystem acceptance test for this portion of the Control and Display Subsystem must be tested on-site. The SDL equipment consists of line balancing networks and 3-to-2 axis converters and modifications for the 60-foot T & D antennas at FGS, VTS, and NHS. The modifications to the 60-foot T & D antennas

are of such a nature that a portion of the development must be carried out on-site. This development will be accomplished at FGS since the use of the 60-foot T & D antenna there is unrestricted. The modifications to the 60-foot T & D antenna and the site wiring will be involved in the SDL portions of the C & S Subsystem Acceptance Test. Table 3-5 lists the parameters which are to be tested and provides a cross reference between the Aerospace Design Criteria, Subsystem Specification, Subsystem Acceptance Test, I & C Phase III Test Procedures, and Computer Diagnostic Programming.

3.7 TIMING SUBSYSTEM

The time display generator, time display distributors, time display units and the timing terminal units will be tested as a portion of the subsystem acceptance test at Philco WDL. The time converter unit, because it does not interface directly with the other timing equipment, will be tested as a separate portion of the subsystem acceptance test as the subcontractors' plant. No on-site subsystem tests are planned. Table 3-6 lists the acceptance test parameter to be tested and provides a cross reference between the Aerospace Design Criteria, Subsystem Specification, Subsystem Acceptance Test, I & C Phase III Test Procedures, and Computer Diagnostic Programming.

3.8 COMMUNICATIONS SUBSYSTEM

1. Intra-Station

   Subsystem acceptance tests will be conducted on-site at the two applicable stations (TTS and FGS). At TTS, since two subcontractors are involved, the acceptance testing will be in two portions.

2. Inter-station

   The MODEMS and auto sync units for all stations and STA which Philco WDL will provide will be acceptance tested at the subcontractors' plant.

At TTS and FGS, a Philco WDL subcontractor will install wiring from a master frame to a test facility and from the test facility to termination equipment for voice circuits. This portion of the inter-station communications will be subsystem acceptance tested with the intra-station communications.

It will be necessary in the Phase IV B integration testing that development of test procedures be effected by a team of all contractors concerned with AFSSD guidance.

Table 3-7 lists the subsystem parameters and provides a cross reference between Design Criteria, the Subsystem Acceptance Test and the Subsystem Specification. Table 3-7 applies to TTS only. Since the equipment acceptance testing at FGS will be performed by Western Electric Company no table will be supplied for FGS.

3.9 CHECKOUT SUBSYSTEM

The information on the Checkout Subsystem will be supplied after the subsystem specification is approved.

SECTION 4

PHASE III TESTS

4.1 GENERAL

Phase III tests will consist of the rerunning of selected portions of the subsystem acceptance test. Each subsystem will be re-verified in its site environment. Tables 3-1 through 3-8 show the subsystem parameters which will be re-verified for each of the applicable subsystems.

SECTION 5
PHASE IV A TESTS

5.1 GENERAL

Phase IV A tests will consist of the interfacing of individual subsystems. To verify the subsystem interface, system loop tests will be conducted which will utilize the analog and digital command systems and test the closure of the command verification loop. Telemetry reception from FM/FM, GPI, and PCM equipment and processing of tracking, commands and telemetry data will be demonstrated. Operation of the SDL and the Communications Subsystem will be verified. During Phase IV A testing the station operational computer program will be debugged and validated. Test requirements will be as specified in the system specification.

SECTION 6
ANALYSIS AND EVALUATION

6.1 GENERAL

Results of Phase III tests will consist of a copy of the Phase III test procedures and the completed data sheets. WDL Form 151 "Trouble and Failure Report" for each failure or trouble encountered will become a part of the Phase III test procedures.

6.2 FINAL TEST REPORT

A final test report will be written which will contain all Phase IV test results and evaluations. The test report will show all troubles and failures encountered. In case of deviation from the test procedures, the test procedure used shall be provided. All recordings and printouts shall be a portion of the report.

6.3 SUBSYSTEM TEST DATA BOOK

A subsystem test data book will be compiled for each subsystem. This test data book is intended for use by the station personnel in maintenance of the applicable subsystem. It will contain a history of the equipment showing all test data, wire lists and calibration and repairs. The test data book will consist of the following sections:

A. Multiple Satellite Augmentation Program Description including Station Block Diagram.

B. Program Specification Tree

C. Subsystem Specification and Acceptance Test (including completed data sheets)

D. Detailed Subsystem Equipment List

E. Phase III Test Procedures (including completed data sheets)

F. Phase IV Test Procedures (including completed data sheets)

G. Equipment Acceptance Tests (including completed data sheets)

H. Subsystem Wire List

I. Installations Wire List

J. Field Modification Record

K. Subsystem Configuration Change Record

L. Subsystem Equipment Calibration, Preventative Maintenance, Repair and Overhaul Schedule/Log

M. Publications Record

APPENDIX A

TABLES 3-1 through 3-8

MAJOR FUNCTIONS TO BE TESTED

TABLE INTERPRETATION LEGEND FOR TABLES 3-1 through 3-8

COLUMN	CONTENTS
(A)	Functional parameters of Paragraph 4 of the most current amendments and revisions of WDL Subsystem Specification WDL-98------09.
(B)	Applicable paragraph numbers of acceptance tests of Paragraph 4 of WDL-98------09.
(C)	Applicable paragraph numbers of performance requirements of Paragraph 3 of WDL-98------09.
(D)	Applicable paragraph numbers of Aerospace Design Guide TOR ----.
(E)	Applicable MSAP major equipment required to test the functional parameter.
(F)	Acceptance tests to be performed at a Philco WDL or vendor plant are indicated by an X and/or by the listing of peripheral equipment. The peripheral equipment includes simulation test equipment, aircraft, other available subsystems or portions thereof, etc.
(G)	Acceptance tests known to be performed or completed on-site are indicated by an X and/or by the listing of peripheral equipment. These acceptance tests shall be performed during the Phase III period in addition to normal Phase III tests.

COLUMN	CONTENTS
(H)	I&C reverification tests (Phase III) to be performed on-site are indicated by an X and/or by the listing of peripheral equipment. These tests shall include the AT tests indicated in Column G.
(I)	Indicates the availability of detailed acceptance test procedures (-04). Component or subsystem specification numbers are listed (WDL-98------04 or 09). An estimated release date is given where no (-04) procedure is available.
(J)	Indicates the availability of detailed I&C Phase III test procedures. An estimated release date is given where no procedure is available.
(K)	Lists the applicable identifying number relating the diagnostic computer program available for each parameter listed in Column A.

Notes:

N/A Not Applicable

X Test to be performed but no peripheral equipment required

(1) Where a WDL-98------09 procedure is indicated several components are interfaced to test the functional parameter. The applicable test procedures are included in the subsystem specification.

(2) Due to the interface of the Control and Display Subsystem with all other subsystems the indicated tests are performed during Phase III. The required functional

parameters to be tested, and their tolerances, are listed in the subsystem specification WDL-98-2048A-09 The detailed test procedures are listed in the Phase III procedure WDL-97-143845-01.

(3) Engineering evaluation tests are conducted on components; therefore, no WDL-98------04 will be written.

(4) Interface tests are not conducted at the vendor's plant. These tests will be conducted on-site during Phase III testing to the requirements stated in the subsystem specifications.

(5) These tests will be conducted according to the AT portion of the applicable subsystem specification, since component AT's are not required.

(6) A WDL in-house test procedure for laboratory testing of the telemetry processor.

(7) The FM/FM TLM Ground Station Subsystem components were procurred as off-the-shelf items and were tested to the vendor's AT. The functional parameters listed in Table 3-3 are retested at the subsystem level using the AT procedures in the subsystem specification.

TABLE 3-1 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM RADAR TRACKING (PRELORT)

(WDL-98-2043-B-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS: AT (PAR. 4) WDL-98-20438-09 (B)	APPLICABLE PARAGRAPHS: S/S (PAR. 3) WDL-98-20438-09 (C)	APPLICABLE PARAGRAPHS: TOR # 930(2110)-2 DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS: VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ACCEPTANCE TESTS: ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES: AT WDL-98-2031-04 or WDL-98-20431-09 (I)	AVAILABILITY OF DETAILED PROCEDURES: PHASE III WDL-97-143836-01 (J)	COMPUTER * PROGRAMMING (DIAGNOSTIC) (K)
1. OVERALL TRACKING	4.4.1.1	3.4.1.1	N/A	N/A	N/A	N/A	N/A	WDL-98-2031-04 (4.5.1.1)	N/A	N/A
2. SKIN TRACKING	4.4.1.1.1	3.4.1.1.1	5.9	Total Radar Tracking Subsystem (RTS)	X - Fly-by A/C	"	"	WDL-98-2031-04 (4.5.1.1.1)	"	"
3. BEACON TRACKING	4.4.1.1.2	3.4.1.1.2	5.9	Total RTS	Demonstrated by Calculations	"	"	WDL-98-2031-04 (4.5.1.1.2)	"	"
4. RANGE DATA	4.4.1.1.3	3.4.1.1.3	N/A	OA 278-A18, A23	X - Range Simulator	"	"	WDL-98-2031-04 (4.5.2.8.1.2) (4.5.2.5.6.3)	"	"
5. TRACKING THRESHOLD LEVELS	4.4.1.2	3.4.1.2	4.5	N/A	"	"	"	WDL-98-2031-04 (4.5.1.2)	"	"
6. AUTOMATIC ANGLE TRACKING	4.4.1.2.1	3.4.1.2.1	N/A	N/A	"	"	"	WDL-98-2031-04 (4.5.1.2.1)	"	"
7. ANGLE TRACK ACQUISITION	4.4.1.2.1.1	3.4.1.2.1.1	4.5.2	Total RTS	X - Boresight Tower	"	"	WDL-98-2031-04 (4.5.1.2.1.1)	"	"
8. ANGLE TRACK HOLD	4.4.1.2.1.2	3.4.1.2.1.2	4.5.1	Total RTS	X - Boresight Tower	"	"	WDL-98-2031-04 (4.5.1.2.1.2)	"	"
9. AUTOMATIC RANGE TRACKING	4.4.1.2.2	3.4.1.2.2	N/A	N/A	"	"	"	WDL-98-2031-04 (4.5.1.2.2)	"	"
10. RANGE TRACK ACQUISITION	4.4.1.2.2.1	3.4.1.2.2.1	4.5.4	Total RTS	X - Boresight Tower	"	"	WDL-98-2031-04 (4.5.1.2.2.1)	"	"
11. RANGE TRACK HOLD	4.4.1.2.2.2	3.4.1.2.2.2	4.5.3	Total RTS	X - Boresight Tower	"	"	WDL-98-2031-04 (4.5.1.2.2.2)	"	"

SUBSYSTEM

TABLE 3-1 - MAJOR FUNCTIONS TO BE TESTED
RADAR TRACKING (PRELIM'T)
(WDL-98-2043-B-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS AT (PAR. 4) WDL-9-20438-09 (B)	S/S (PAR. 3) WDL-98-20438-09 (C)	TOR # 930(2110)-2 DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES AT WDL-98-2031-04 or WDL-98-20438-09 (I)	PHASE III WDL-97-143836-01 (J)	COMPUTER * PROGRAMMING (DIAGNOSTIC) (K)
12. AUTOMATIC TRACKING RATES	4.4.1.3	3.4.1.3	N/A	N/A	N/A	N/A	N/A	WDL-98-2031-04 (4.5.2.6.5)	N/A	N/A
13. AUTOMATIC ANGLE TRACKING	4.4.1.3.1	3.4.1.3.1	"	OA 275-000 OA 274-000	X - Fly-by A/C	"	"	WDL-98-2031-04 (4.5.2.6.5)	"	"
14. AUTOMATIC RANGE TRACKING	4.4.1.3.2	3.4.1.3.2	"	OA 275-000 OA 274-000	X - Range Simulator	"	X	WDL-98-2031-04 (4.5.2.5.3)	WDL-97-143836-01	"
15. RADAR TRACKING SYSTEM ACCURACY	4.4.1.4	3.4.1.4	"	N/A	N/A	"	N/A	WDL-98-2031-04 (4.5.1.3)	N/A	"
16. TRACKING LIMITATIONS	4.4.1.4.1	3.4.1.4.1	"	N/A	"	"	"	WDL-98-2031-04 (4.5.1.3.1)	"	"
17. ANGULAR ACCURACY	4.4.1.4.2	3.4.1.4.2	4.2	N/A	"	"	"	WDL-98-2031-04 (4.5.1.3.1)	"	"
18. MAXIMUM ANGULAR	4.4.1.4.2.1	3.4.1.4.2.1	4.2.1	Total RTS	X - Boresight Tower Brush Recorder	"	"	WDL-98-2031-04 (4.5.1.3.1.1)	"	"
19. SERVO LAGS	4.4.1.4.2.2	3.4.1.4.2.2	4.2.2	Total RTS	X - Boresight Tower Fly-by A/C	"	"	WDL-98-2031-04 (4.5.1.3.1.2)	"	"
20. DEGRADATION DUE TO EXTERNALLY APPLIED TORQUE	4.4.1.4.2.3	3.4.1.4.2.3	4.2.5	Total RTS	X - Boresight Tower Lifting Bracket X Jacks	"	"	WDL-98-2031-04 (4.5.1.3.1.3)	"	"
21. RANGE ACCURACY	4.4.1.4.3	3.4.1.4.3	N/A	N/A	N/A	"	"	WDL-98-2031-04 (4.5.1.3.2)	"	"
22. MAXIMUM RANGE ERROR	4.4.1.4.3.1	3.4.1.4.3.1	4.3.1	Total RTS	X - Range Simulator	"	"	WDL-98-2031-04 (4.5.1.3.2.1)	"	"
23. SERVO LAGS	4.4.1.4.3.2	3.4.1.4.3.2	4.3.2	Total RTS	X- Boresight Tower Range Simulator	"	"	WDL-98-2031-04 (4.5.1.3.2.2)	"	"

TABLE 3-1 Major Functions To Be Tested

SUBSYSTEM RADAR TRACKING (PRELORT)

(WDL-98-2043-B-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION	APPLICABLE PARAGRAPHS			APPLICABLE MAJOR SUBSYSTEM EQUIP.	ACCEPTANCE TESTS		PHASE III TESTS PERIPHERAL EQUIPMENT)	AVAILABILITY OF DETAILED PROCEDURES		COMPUTER PROGRAMMING (DIAGNOSTIC)
	AT (PAR.4) WDL-98-2043B-09	S/S (PAR.3) WDL-98-2043B-09	TOR # 930-(2110)-2 DESIGN GUIDE		VENDOR/IN-HOUSE PERIPHERAL EQUIPMENT)	ON-SITE PERIPHERAL EQUIPMENT)		AT WDL-98-2031-04 WDL-98-2043B-09	PHASE III WDL-97-143836-01	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
24. INTERFACE	4.4.1.5	3.4.1.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
25. SYSTEM INPUTS	4.4.1.5.1	3.4.1.5.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	"
26. SYNCHRO ANALOG	4.4.1.5.1.1	3.4.1.5.1.1	N/A	Antenna Pedestal OA-278	X-	N/A	N/A	N/A	N/A	"
27. TIME CODE WORD	4.4.1.5.1.2	3.4.1.5.1.2	N/A	Antenna Pedestal	N/A	X-	N/A	WDL-98-2043B-09 4.4.1.5 (See Note #4)	N/A	"
28. TIME CODE WORD	4.4.1.5.1.3	3.4.1.5.1.3	N/A	Antenna Pedestal	N/A	X-All Radars	N/A	N/A	N/A	"
29. EARLY FRAME PULSE	4.4.1.5.1.4	3.4.1.5.1.4	N/A	Antenna Pedestal	N/A	X-	N/A	N/A	N/A	"
30. 1000 PPS SIGNAL	4.4.1.5.1.5	3.4.1.5.1.5	N/A	Antenna Pedestal	N/A	X-	N/A	N/A	N/A	"
31. ENCODER STROBE PULSE	4.4.1.5.1.6	3.4.1.5.1.6	N/A An	Antenna Pedestal	N/A	X-All Radars	N/A	N/A	N/A	"
32. TECHNICAL POWER	4.4.1.5.1.7	3.4.1.5.1.7	N/A	RU 347E	N/A	X-	N/A	N/A	N/A	"
33. UTILITY POWER	4.4.1.5.1.8	3.4.1.5.1.8	N/A	RU 656	N/A	X-	N/A	N/A	N/A	"
34. TRACKING STATUS	4.4.1.5.1.9	3.4.1.5.1.9	N/A	OA 278	N/A	X - Radar #1 only	N/A	N/A	N/A	"
35. ANALOG COMMANDS	4.4.1.5.1-10 (4.4.2.4)	3.4.1.5.1.10	N/A	OA 278	N/A	N/A	N/A	WDL-98-2031-04 (App. A 4.5.1.5)	N/A	"
36. DIGITAL COMMANDS	4.4.1.5.1-11 (4.4.2.4)	3.4.1.5.1.11	N/A	OA 278	N/A	N/A	N/A	WDL-98-2031-04 (App. A 4.5.1.5)	N/A	"
37. SYSTEM OUTPUTS	4.4.1.5.2	3.4.1.5.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	"
38. SYNCHRO ANALOG	4.4.1.5.2.1	3.4.1.5.2.1	5.1.4	Antenna Pedestal OA 278	X-	N/A	N/A	WDL-98-2031-04	N/A	"
39. DIGITAL DATA	4.4.1.5.2.2	3.4.1.5.2.2	5.1.7	Antenna Pedestal OA 278	X-	N/A	N/A	WDL-98-2031-04 (4.5.1.4.2.1) (4.5.1.4.2.2)	N/A	"

TABLE 3-1 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM RADAR TRACKING (PRELOM)

(WDL-98-2043-8-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS: AT (PAR. 4) WDL-98-2043B-09 (B)	APPLICABLE PARAGRAPHS: S/S (PAR. 3) WDL-98-2043B-09 (C)	APPLICABLE PARAGRAPHS: TOR 0930(2110)-2 DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS: VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ACCEPTANCE TESTS: ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES: AT WDL-98-2031-04 OR WDL-98-2043B-09 (I)	AVAILABILITY OF DETAILED PROCEDURES: PHASE III WDL-97-143836-01 (J)	COMPUTER * PROGRAMMING (DIAGNOSTIC) (K)
40. RADAR STATUS	4.4.1.5.2.3	3.4.1.5.2.3	N/A	OA 278	N/A	X - Radar #1 only	N/A	WDL-98-2043B-09 (4.4.1.5.2)	N/A	N/A
41. RADAR STATUS	4.4.1.5.2.4	3.4.1.5.2.4	"	OA 278	"	X - Radar #1 only	"	(See Note #4)	"	"
42. PASSIVE TRACK	4.4.1.5.2.5	3.4.1.5.2.5	"	OA 278	"	X -	"	N/A	"	"
43. QUALITY BIT FUNCTION	4.4.1.5.2.6	3.4.1.5.2.6	"	OA 278	"	X -	"	N/A	"	"
44. RF SIGNAL	4.4.1.5.2.7	3.4.1.5.2.7	"	Antenna Pedestal OA 278	"	X -	"	WDL-98-2043B-09 (4.4.1.5.2)	"	"
45. DIGITAL SYNC PULSE	4.4.1.5.2.8 (4.4.2.4)	3.4.1.5.2.8	"	Antenna Pedestal OA 278	See Appendix A	N/A	"	(See Note # 4)	"	"
46. DETECTED COMMANDS	4.4.1.5.2.9 (4.4.2.4)	5.4.1.5.2.9	"	Antenna Pedestal OA 278	See Appendix A	"	"	"	"	"
47. RADOME & RADOME HEATING	4.4.1.6	N/A	"	N/A	N/A	WDL-98-2145-04 WDL-98-2144-04	"	WDL-98-2144-04 WDL-98-2145-04	"	"
48. SUBSYSTEM PERFORMANCE	4.4.2	"	5.2	N/A	"	N/A	Slotted Line HP-805A VSWR Meter HP-415B Waveguide to Type N PRD-365 (2 ea.)	N/A	"	"
49. RF SUBSYSTEM	4.4.2.1	"	"	N/A	"	"		"	"	
50. ANTENNA	4.4.2.1.1	3.4.2.1.1	5.2.1	N/A	"	"	N/A	"	"	"
51. ANTENNA GAIN	4.4.2.1.1.1	3.4.2.1.1.1	5.2.4	Antenna Pedestal	X-See Radiatronics A.T. Rev B	"	"	WDL-98-2031-04 (4.5.2.1.1)	"	"
52. BEAM WIDTH	4.4.2.1.1.2	3.4.2.1.1.2	5.2.4	Antenna Pedestal	X-See Radiatronics A.T. Rev B	"	"	WDL-98-2031-04 (4.5.2.1.1.1)	"	"
53. SIDE LOBES	4.4.2.1.1.3	3.4.2.1.1.3	5.2.4	Antenna Pedestal	X-See Radiatronics A.T. Rev B	"	"	WDL-98-2031-04 (4.5.2.1.1.2)	"	"
54. POLARIZATION	4.4.2.1.1.4	3.4.2.1.1.4	5.2.2	Antenna Pedestal	X-See Radiatronics A-T. Rev B	"	"	WDL-98-2031-04 (4.5.2.1.1.1,2,4)	"	"

TABLE 3-1 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM RADAR TRACKING (PRELORT)
(WDL-98-2043-B-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS AT (PAR. 4) WDL-98-2043B-09 (B)	APPLICABLE PARAGRAPHS S/S (PAR. 3) WDL-98-2043B-09 (C)	APPLICABLE PARAGRAPHS TOR # 930(2110)-2 DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ACCEPTANCE TESTS ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (INC. PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES AT WDL-98-2031-04 OR WDL-98-2043B-09 (I)	AVAILABILITY OF DETAILED PROCEDURES PHASE III WDL-97-143836-01 (J)	COMPUTER * PROGRAMMING (DIAGNOSTIC) (K)
55. CROSSOVER	4.4.2.1.1.5	3.4.2.1.1.5	5.2.3	Antenna Pedestal	X- See Radiatronics A.T. Rev B	N/A	N/A	WDL-98-2031-04 (4.5.2.1.1.4)	N/A	N/A
56. SCANNING RATE	4.4.2.1.1.6	3.4.2.1.1.6	N/A	Antenna Pedestal	X-Counter 7360	"	X	WDL-98-2031-04 (4.5.2.1.1.3)	WDL-97-143836-01	"
57. TRANSMISSION LINE	4.4.2.1.2	3.4.2.1.2	"	N/A	N/A	"	N/A	N/A	N/A	"
58. RECEIVING LOSSES	4.4.2.1.2.1	3.4.2.1.2.1	5.2.5	Trans. Line	X - FXR771B, 5164A, PRD 365 HP 415A	"	X	WDL-98-2031-04 (4.5.2.1.2)	WDL-97-143836-01	"
59. TRANSMITTING LOSSES	4.4.2.1.2.2	3.4.2.1.2.2	5.2.6	RF - Line	X -	"	X	WDL-98-2031-04 (4.5.2.1.2,3)	WDL-97-143836-01	"
60. T-R TUBE	4.4.2.1.2.3	3.4.2.1.2.3	N/A	N/A	N/A	"	N/A	No Procedure	N/A	"
61. OPERATION PROTECTION	4.4.2.1.2.-3.1	3.4.2.1.2.-3.1	5.2.7	N/A	X -	"	"	No Procedure	"	"
62. NON-OPERATION PROTECTION	4.4.2.1.2-3.2	3.4.2.1.2.-3.2	N/A	Total RTS	N/A	X -	"	N/A	"	"
63. POWER CAPABILITY	4.4.2.1.2.4	3.4.2.1.2.4	5.2.8	Not defined	"	X - One megawatt Peak power	"	"	"	"
64. WAVEMETER	4.4.2.1.3	3.4.2.1.3	N/A	Not defined	X -	N/A	"	WDL-98-2031-04 (4.5.2.1.5	"	"
65. RECEIVING SUB-SYSTEM	4.4.2.2	3.4.2.2	5.4	N/A	N/A	"	Dummy Load HPS914A Noise Generator HPS347A	"	"	"
66. FREQUENCY	4.4.2.2.1	3.4.2.2.1	5.4.1	OA 278	X - HP-616E	"	Noise Meter HP-340B	WDL-98-2031-04 (4.5.2.2.1)	WDL-97-143836-01	"
67. NOISE FIGURE	4.4.2.2.2	3.4.2.2.2	5.4.2	OA 278	X - All 30, 74,07048 Nards 306	"		WDL-98-2031-04 (4.5.2.2.2)	WDL-97-143836-01	"
68. MINIMUM DISCERNABLE SIGNAL	4.4.2.2.3	3.4.2.2.3	N/A	OA 278	X - HP 616B	"		WDL-98-2031-04 (4.5.2.2.3)	WDL-97-143836-01	

TABLE 3-1 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM RADAR TRACKING (PRELORT)

(WDL-98-2043-B-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS AT (PAR.4) WDL-98-2043B-09 (B)	APPLICABLE PARAGRAPHS S/S (PAR. 3) WDL-98-2043B-09 (C)	APPLICABLE PARAGRAPHS TOR # 930(2110)-2 DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ACCEPTANCE TESTS ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES AT WDL-98-2031-04 or WDL-98-2043B-09 (I)	AVAILABILITY OF DETAILED PROCEDURES PHASE III WDL-97-143836-01 (J)	COMPUTER * PROGRAMMING (DIAGNOSTIC) (K)
69. PREAMPLIFIER	4.4.2.2.4	3.4.2.2.2.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
70. BANDPASS	4.4.2.2.4.1	3.4.2.2.4.1	"	OA 278	X - HP 515B	"	"	WDL-98-2031-04 (4.5.2.2.4.1)	"	"
71. GAIN	4.4.2.2.4.2	3.4.2.2.4.2	"	OA 278	X - HP 616B	"	"	N/A	"	"
72. INSERTION LOSS	4.4.2.2.4.3	3.4.2.2.4.3	"	OA 278	X - HP 616B	"	"	WDL-98-2031-04 (4.5.2.2.4.2)	"	"
73. IMAGE REJECT FILTERS	No Procedure	3.4.2.2.5	"	N/A	X -	"	"	WDL-98-2031-04 (4.5.2.2.5)	"	"
74. LOCAL OSCILLATORS	4.4.2.2.6	3.4.2.2.6	"	N/A	N/A	"	"	WDL-98-2031-04 (4.5.2.2.6)	"	"
75. TUNING RANGE	4.4.2.2.6.1	3.4.2.2.6.1	"	OA 278	X -	"	X	WDL-98-2031-04 (4.5.2.2.6.1)	WDL-97-143836-01	"
76. BALANCED CRYSTAL MIXER	4.4.2.2.7	3.4.2.2.7	"	OA 278	X - HP 616B	"	N/A	WDL-98-2031-04 (4.5.2.2.2 4.5.2.2.4.2)	N/A	"
77. AUTOMATIC FREQUENCY CONTROL	4.4.2.2.8	3.4.2.2.8	"	OA 278	X - HP 616B	"	X	WDL98-2031-04 (4.5.2.2.8)	WDL-97-143836-01	"
78. BEACON AFC	4.4.2.2.8.1	3.4.2.2.8.1	5.4.4	OA 278	N/A	"	N/A	N/A	N/A	"
79. MANUAL OPERATION	4.4.2.2.8.-1.1	3.4.2.2.8.-1.1	5.4.4	N/A	X - HP 616B	"	X	WDL-98-2031-04 (4.5.2.2.8.1)	WDL-97-143836-01	"
80. RADAR AFC	4.4.2.2.8.2	3.4.2.2.8.2	5.4.4	OA 278	X -	"	X	WDL-98-2031-04 (4.5.2.2.8.2)	WDL-97-143836-01	"
81. IF AMPLIFIER	4.4.2.2.9	3.4.2.2.9	N/A	N/A	N/A	"	N/A	N/A	N/A	"
82. WIDEBAND IF AMPLIFIER	4.4.2.2.9.1	3.4.2.2.9.1	"	OA 278	X - Reeves TD 11060	"	"	WDL98-2031-04 (4.5.2.2.9.2.1)	"	"
83. NARROWBAND IF AMPLIFIER	4.4.2.2.9.2	3.4.2.2.9.2	"	OA 278	X - Reeves TD 11060	"	"	WDL-98-2031-04 (4.5.2.2.9.2.2)	"	"
84. AUTOMATIC GAIN CONTROL	4.4.2.2.93	3.4.2.2.9.3	5.4.3	OA 278	X - HP 616B	"	"	WDL-98-2031-04 (4.5.2.2.9.4)	"	

TABLE 3-1 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM RADAR TRACKING (PRELORT)

(WDL-98-2043-B-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS AT (PAR. 4) WDL-98-20438-09 (B)	S/S (PAR. 3) WDL-98-20438-09 (C)	TOR # 930(2110)-2 DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES AT WDL-98-2031-04 OR WDL-98-20438-09 (I)	PHASE III WDL-97-143836-01 (J)	COMPUTER * PROGRAMMING (DIAGNOSTIC) (K)
85. BEACON DELAY COMPENSATION	4.4.2.2.10	3.4.2.2.10	5.5.8	OA 275	X - HP 6168	N/A	N/A	WDL-98-2031-04 (4.5.2.2.11)	N/A	N/A
86. TRANSMITTING SUBSYSTEM	4.4.2.3	3.4.2.3	N/A	N/A	N/A	"	Power Meter HP-434A	WDL-98-2031-04 (4.5.2.3)	"	"
87. FREQUENCY	4.4.2.3.1	3.4.2.3.1	"	Transmitting System	X -	"	X	WDL-98-2031-04 (4.5.2.3.1)	WDL-97-143836-01	"
88. PEAK POWER	4.4.2.3.2	3.4.2.3.2	"	Transmitting System	X - TS 125	"	X	WDL-98-2031-04 (4.5.2.3.2)	WDL-97-143836-01	"
89. RF OUTPUT PULSE	4.4.2.3.5	3.4.2.3.3	"	N/A	N/A	"	N/A	WDL-98-2031-04 (4.5.2.3.3)	N/A	"
90. PULSE WIDTH	4.4.2.3.3.1	3.4.2.3.3.1	"	Transmitting System	X - Tek-455	"	X	WDL-98-2031-04 (4.5.2.3.3)	WDL-87-143836-01	"
91. RISE TIME	4.4.2.3.3.2	3.4.2.3.3.2	"	Transmitting System	X - Tek-455	"	X	WDL-98-2031-04 (4.5.2.3.3.1)	WDL-97-143836-01	"
92. MULTIPULSE CAPABILITY	4.4.2.3.4	3.4.2.3.4	"	Transmitting System	See Appendix A	"	X	WDL-98-2031-04 (4.5.2.3.4)	WDL-97-143836-01	"
93. DUTY RATIO	4.4.2.3.5	3.4.2.3.5	"	Transmitting System	See Appendix A	"	X	WDL-98-2031-04 (4.5.2.3.5)	WDL-97-143836-01	"
94. HIGH VOLTAGE POWER SUPPLY	4.4.2.3.6	3.4.2.3.6	"	Transmitting System	X - TD 10924	"	N/A	WDL-98-2031-04 (4.5.2.3.7)	N/A	"
95. COMMAND SUBSYSTEM	4.4.2.4 Amend A (c)	3.4.2.4 Amend A (c)	"	N/A	"	"	Oscilloscope Tektronix 545A	WDL-98-2031-04 Amend A (c) (4.5.2.4)	WDL-97-143836-01	"
96. RANGING SUBSYSTEM	4.4.2.5	3.4.2.5	5.5	N/A	"	"	N/A	WDL-98-2031-04 (4.5.2.5)	N/A	"
97. MASTER TIMING OSCILLATOR	4.4.2.5.1	3.4.2.5.1	N/A	N/A	"	"	"	WDL-98-2031-04 (4.5.2.5.1)	"	"

TABLE 3-1 MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM RADAR TRACKING (PRELORT)

(WDL-98-2043-B-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS AT (PAR. 4) WDL-98-2043B-09 (B)	APPLICABLE PARAGRAPHS S/S (PAR 3) WDL-98-2043B-09 (C)	APPLICABLE PARAGRAPHS TOR # 930(2110)-2 DESIGN GUIDE (D)	APPLICABLE .. MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ACCEPTANCE TESTS ON-SITE PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES AT WDL-98-2031-04 or WDL-98-20438-09 (I)	AVAILABILITY OF DETAILED PROCEDURES PHASE III WDL-97-143836-01 (J)	COMPUTER PROGRAMMING (DIAGNOSTIC) (K)
98. CRYSTALS	4.4.2.5.1.1	3.4.2.5.1.1	N/A	OA 278	X - TD 11161, Reeves	N/A	N/A	WDL-98-2031-04 (4.5.2.5.1.1)	N/A	N/A
99. OVENS	4.4.2.5.1.2	3.4.2.5.1.2	"	OA 278	X -Reeves, TD 11159	"	"	WDL-98-2031-04 (4.5.2.5.1.2)	"	"
100. FREQUENCY RANGE	4.4.2.5.1.3	3.4.2.5.1.3	"	OA 278	X - Counter - 7360	"	X	WDL-98-2031-04 (4.5.2.5.1.3	WDL-97-143836-01	"
101. PULSE REPETITION FREQUENCY	4.4.2.5.2	3.4.2.5.2	5.5.1	OA 278	X - Counter - 7360	"	X	WDL-98-2031-04 (4.5.2.5.2)	WDL-97-143836-01	"
102. AUTOMATIC PRF SWITCHING	4.4.2.5.3	3.4.2.5.3	5.5.1	OA 278	X - Tek - 545A	"	X	WDL-98-2031-04 (4.5.2.5.2.1.1)	WDL-97-143836-01	"
103. AUTOMATIC PHASING	4.4.2.5.4	3.4.2.5.4	5.9 5.5.7 5.5.1	OA 278	X - HP 6168, TEK 545	"	X	WDL-98-2031-04 (4.5.2.5.3.2)	WDL-97-143836-01	"
104. MODES OF OPERATION	4.4.2.5.5	3.4.2.5.5	5.9	N/A	N/A	"	N/A	N/A	N/A	"
105. AUTOMATIC OPERATION	4.4.2.5.5.1	3.4.2.5.5.1	N/A	N/A	"	"	"	"	"	"
106. TRACKING RATES	4.4.2.5.5.-1.1	3.4.2.5.5.1.1	"	OA 278	X - Range Simulator	"	X	WDL-98-2031-04 (4.5.2.5.3)	WDL-97-143836-01	"
107. RANGE MEMORY	4.4.2.5.5.-1.2	3.4.2.5.5.1.2	"	OA 278	X - Range Simulator	"	X	WDL-98-2031-04 (4.5.2.5.3.3)	WDL-97-143836-01	"
108. MANUAL OPERATION	4.4.2.5.5.2	3.4.2.5.5.2	"	N/A	N/A	"	N/A	N/A	N/A	"
109. SLEWING RATE	4.4.2.5.5.-2.1	3.4.2.5.5.2.1	5.5.3	OA 278	X -	"	"	WDL-98-2031-04 (4.5.2.5.4.1.1.2	" "	"
110. AIDED TRACKING	4.4.2.5.5.-2.2	3.4.2.5.5.2.2	5.5.3	OA 278	X -	"	"	WDL-98-2031-04 (4.5.2.5.4.2)	"	"
111. SMOOTHING	4.4.2.5.6	3.4.2.5.6	N/A	OA 278	X - "	X - HP 6162 6 - Ch. Recorder	NOTE: All Radars	N/A	"	"

TABLE 3-1 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM RADAR TRACKING (PRELOKT)

(WDL-98-2043-1-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS			APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS			Availability of Detailed Procedures		COMPUTER # PROGRAMMING (DIAGNOSTIC)
	AT (PAR.4) WDL-98-2043B-09 (B)	S/S (PAR. 3) WDL-98-2043B-09 (C)	TOR # 930(2110)-2 DESIGN GUIDE (D)		VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AT WDL-98-2031-04 OR WDL-98-2043B-09 (I)	PHASE III WDL-97-143836-01 (J)	
112. RANGE GATE	4.4.2.5.7	3.4.2.5.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
113. WIDE RANGE GATE	4.4.2.5.7.1 (later date)	3.4.2.5.7.1	5.5.6	OA 278	"	"	NOTE: To be tested later	"	"	"
114. NARROW RANGE GATE	4.4.2.5.7.2	3.4.2.5.7.2	5.5.6	OA 278	X - HP 6158, Range Simulator, Tower	"	N/A	" WDL-98-2031-04 (4.5.1.2.2.2)	"	"
115. REMOTE SLAVING	4.4.2.5.8	3.4.2.5.8	5.5.4	OA 278	X - Synchro test Fixture (SK1929 + SK19294)	"	"	WDL-98-2031-04 (4.5.2.9.2)	"	"
116. RANGE LIMITS	4.4.2.5.9	3.4.2.5.9	5.5.1	OA 278	X - HP 6158	"	"	WDL-98-2031-04 (4.5.2.8.1.2)	"	"
117. ANTENNA POSITIONING SUBSYSTEM	4.4.2.6	3.4.2.6	5.1	N/A	N/A	"	"	N/A	"	"
118. ANTENNA MOVEMENT	4.4.2.6.1	3.4.2.6.1	5.1.2	N/A	"	"	X	WDL-98-2031-04	WDL-97-143836-01	"
119. AZIMUTH	4.4.2.6.1.1	3.4.2.6.1.1	N/A	OA 278	X -	"	N/A	N/A	N/A	"
120. ELEVATION	4.4.2.6.1.2	3.4.2.6.1.2	"	OA 278	X -	"	"	N/A	N/A	
121. TRACKING	4.4.2.6.1.-2.1	3.4.2.6.1.2.1	"	OA 278	X -	"	"	WDL-98-2031-04 (4.5.2.6.1.1.2 4.5.1.3.1.2)	. . . . .	"
122. BORESIGHTING	4.4.2.6.1.-2.2	3.4.2.6.1.2.2	"	Not Defined	Not clearly covered		"	WDL-98-2031-04	"	"
123. VELOCITY LIMITING	4.4.2.6.1.-2.3	3.4.2.6.1.2.3	"	Antenna Pedestal OA 278	X -	"	X	WDL-98-2031-04 (4.5.2.6.1.3)	WDL-97-143836-01	"
124. SERVO OPERATION	4.4.2.6.2	3.4.2.6.2	"	Antenna Pedestal OA 278	X -	"	N/A	WDL-98-2031-04 (4.5.2.6.2)	N/A	

TABLE 3-1 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM RADAR TRACKING (PRELORT)

(WDL-98-2043-B-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS: AT (PAR. 4) WDL-98-2043B-09 (B)	S/S (PAR. 3) WDL-98-2043B-09 (C)	TOR # 930(2110)-2 DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS: VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES: AT WDL-98 2031-04 OR WDL-98-2043-09 (I)	PHASE III WDL 97 143836-01 (J)	COMPUTER * PROGRAMMING (Diagnostic) (K)
125. MODES OF OPERATION	4.4.2.6.2.1	3.4.2.6.2.1	5.1.1 5.9	Antenna Pedestal OA 278	X -	N/A	N/A	WDL 98-2031-04 (4.5.2.6.2.1)	N/A	N/A
126. MODE COMBINATIONS	4.4.2.6.2.2	3.4.2.6.2.2	N/A	Antenna Pedestal OA 278	X -	"	"	WDL-98 2031-04 (4.5.2.6.2.1.1)	"	"
127. REMOTE SLAVING	4.4.2.6.2.3	3.4.2.6.2.3	"	N/A	N/A	"	"	N/A	"	"
128. REMOTE	4.4.2.6.2.-3.1	3.4.2.6.2.3.1	"	Antenna Pedestal	X - 1-to-1 syncro control transformer SK19295 + SK19294	"	"	WDL 98-2031-04 (4.5.2.9.2.2 4.5.2.6.2.1.4)	"	"
129. SLAVING ACCURACY	4.4.2.6.2-3.2	3.4.2.6.2.3.2	"	Antenna Pedestal OA 278	X -	"	"	N/A	"	"
130. ANTENNA POSITIONING RATES	4.4.2.6.3	3.4.2.6.3	"	N/A	N/A	"	"	"	"	"
131. AUTOMATIC	4.4.2.6.3.1	3.4.2.6.3.1	"	Total RTS	X - Fly-By A/C 2 ch. Recorder	"	"	WDL 98 2031-04 (4.5.2.6.5)	"	"
132. MANUAL	4.4.2.6.3.2	3.4.2.6.3.2	"	Total RTS	N/A	X - 2 channel recorder (Radar #1 & 2 only)	"	N/A	"	"
133. SMOOTHING	4.4.2.6.4	3.4.2.6.4	5.1.3	Total RTS	X - Fly-by A/C	N/A	"	WDL-98 2031-04 (4.5.2.6.3.1)	"	"
134. SECANT CORRECTION	4.4.2.6.5	3.4.2.6.5	N/A	Total RTS	X -	"	"	WDL-98-2031-04 (4.5.2.6.4)	"	"
135. OPERATIONAL MODES	4.4.2.6.6	3.4.2.6.6	5.9	Total RTS	X -	"	"	WDL-98-2031-04 (4.5.2.6.2.1.1)	"	"
136. FUNCTION AND EVENT RECORDING SUBSYSTEM	4.4.2.7	3.4.2.7	N/A	N/A	N/A	"	Pulse Generator HP 212A	N/A	"	"
137. SIX CHANNEL RECORDER	4.4.2.7.1	3.4.2.7.1	5.8.1	Auxiliary Console	X -	"	X	WDL-98-2031-04 (4.5.2.7.3)	WDL-97-143836-01	"

TABLE 3-1 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM RADAR TRACKING (PRELORT)

(WDL-98-2043-B-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS: AT (PAR. 4) WDL-98-2043B-09 (B)	S/S (PAR. 3) WDL-98-2043B-09 (C)	TOR # 930(2110)-2 DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIPM (E)	ACCEPTANCE TESTS: VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES: AT WDL-98-2031-04 or WDL-98-2043B-09 (I)	PHASE III WDL-97-143836-01 (J)	COMPUTER * PROGRAMMING (DIAGNOSTIC) (K)
138. CHART SPEED	4.4.2.7.1.1	3.4.2.7.1.1	N/A	Auxiliary Console	Supplied at later date	N/A	N/A	WDL-98-2031-04 (4.5.2.7.1)	N/A	N/A
139. FREQUENCY RESPONSE	4.4.2.7.1.2	3.4.2.7.1.2	N/A	Auxiliary Console	X - Reeves TD 19023 6 & 100 ch. recorder	N/A	"	WDL-98-2031-04 (4.5.2.7.2)	"	"
140. CHANNEL ASSIGNMENTS	4.4.2.7.1.3	3.4.2.7.1.3	"	Auxiliary Console	X -	"	X -	WDL-98-2031-04 (4.5.2.7.3)	WDL-97-143836-01	"
141. 100 CHANNEL RECORDER	4.4.2.7.2	3.4.2.7.2	5.8.2	Auxiliary Console	X -	"	N/A	WDL-98-2031-04 (4.5.2.7.4)	"	"
142. CHART SPEED	4.4.2.7.2.1	3.4.2.7.2.1 Later Date	N/A	Auxiliary Console	To be supplied at a later date.	"	"	WDL-98-2031-04 (4.5.2.7.1)	N/A	"
143. FREQUENCY RESPONSE	4.4.2.7.2.2	3.4.2.7.2.2	"	Auxiliary Console	X - Reeves TD 10923	"	"	WDL-98-2031-04 (4.5.2.7.2)	"	"
144. FUNCTIONS TO BE RECORDED	4.4.2.7.2.3	3.4.2.7.2.3	"	Auxiliary Console	X -	"	X -	WDL-98-2031-04 (4.5.2.7.4)	WDL-97-143836-01	"
145. DATA TRANSMISSION SUBSYSTEM	4.4.2.8	3.4.2.8	"		"	"	N/A	N/A	N/A	"
146. DIGITAL DATA	4.4.2.8.1	3.4.2.8.1	"		"	"	"	"	"	"
147. ANGLE SHAFT ENCODER	4.4.2.8.1.1	3.4.2.8.1.1		Antenna Pedestal	X - Test Fixture XA-20057	"	X -	WDL-98-2031-04 (4.5.2.8.1.1)	WDL-97-143836-01	"
148. LINEARITY	4.4.2.8.1.-1.1	3.4.2.8.1.1.-1	"	Antenna Pedestal	X - Test Fixture XA-20057	"	X -	WDL-98-2031-04 (4.5.2.8.1.1.1)	WDL-97-143836-01	"
149. RANGE SHAFT ENCODER	4.4.2.8.1.2	3.4.2.8.1.2	"	Antenna Pedestal OA 278	X - AZ, EL, RG Grey Code Display Unit	"	X -	WDL-98-2031-04 (4.5.2.8.1.2)	WDL-97-143876-01	"
150. LINEARITY	4.4.2.8.1.-	3.4.2.8.1.2.1	"	Antenna Pedestal	X - "	"	X -	WDL-98-2031-04 (4.5.2.8.1.2.1)	WDL-97-143836-01	"

TABLE 3-1 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM RADAR TRACKING (PRELORT)

(WDL-98-2043-B-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS: AT (PAR. 4) WDL-98-2043B-09 (B)	APPLICABLE PARAGRAPHS: S/S (PAR. 3) WDL-98-2043B-09 (C)	APPLICABLE PARAGRAPHS: TOR # 930(2110)-2 DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS: VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ACCEPTANCE TESTS: ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES: AT WDL-98-2031-04 or WDL-98-2043B-09 (I)	AVAILABILITY OF DETAILED PROCEDURES: PHASE III WDL-97-143836-01 (J)	COMPUTER* PROGRAMMING (DIAGNOSTIC) (K)
151. ANALOG DATA	4.4.2.8.2	3.4.2.8.2	N/A	N/A	N/A	N/A	N/A	WDL-98-2031-04 (4.5.2.8.3)	N/A	N/A
152. SYNCHRO EXCITATION	4.4.2.8.2.1	3.4.2.8.2.1	"	Synchro reference power supply	X -	"	"	WDL-98-2031-04 (4.5.1.4.4.1)	"	"
153. RANGE SYNCHRO	4.4.2.8.2.2	3.4.2.8.2.2	"	N/A	"	"	"	N/A	"	"
154. REPRESENTATION	4.4.2.8.2.-2.1	3.4.2.8.2.2.1	"	OA 278	X -	"	"	WDL-98-2031-04 (4.5.2.8.3.1.1)	"	"
155. ACCURACY	4.4.2.8.2.-2.2	3.4.2.8.2.2.2	"	OA 278	X -	"	"	WDL-98-2031-04 (4.5.2.8.3.1.1)	"	"
156. ELEVATION SYNCHRO	4.4.2.8.2.3	3.4.2.8.2.3	"	N/A		"	"	N/A	"	"
157. REPRESENTATION	4.4.2.8.2.-3.1	3.4.2.8.2.3.1	"	Antenna Pedestal OA 278	X - Synchro bridge	"	"	WDL-98-2031-04 (4.5.2.8.3.2.1)	"	"
158. ACCURACY	4.4.2.8.2.-3.2	3.4.2.8.2.3.2	"	Antenna Pedestal OA 278	X - Synchro bridge	"	"	WDL-98-2031-04 (4.5.2.8.3.2.1)	"	"
159. AZIMUTH SYNCHRO	4.4.2.8.2.4	3.4.2.8.2.4	"	N/A	N/A	"	"	N/A	"	"
160. REPRESENTATION	4.4.2.8.2.-4.1	3.4.2.8.2.4.1	"	Antenna Pedestal OA 278	X - Synchro bridge	"	"	WDL-98-2031-04 (4.5.2.8.3.3.1)	"	"
161. ACCURACY	4.4.2.8.2.-4.2	3.4.2.8.2.4.2	"	Antenna Pedestal OA 278	X - Synchro bridge	"	"	WDL-98-2031-04 (4.5.2.8.3.3.1)	"	"
162. ACQUISITION SUBSYSTEM	4.4.2.9	3.4.2.9	"	N/A	N/A	"	"	N/A	"	"
163. SCAN MODE	4.4.2.9.1	3.4.2.9.1	"	Antenna & Pedestal OA 278	X -	"	"	WDL-98-2031-04 (4.5.2.9.1)	"	"
164. SCANNING SPEED	4.4.2.9.1.1	3.4.2.9.1.1	"	Antenna & Pedestal OA 278	X -	"	X -	WDL-98-2031-04 (4.5.2.9.1.1)	WDL-97-143836-01	"

TABLE 3-1 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM RADAR TRACKING (PRIOR)

(WDL-98-2043-3-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION	APPLICABLE PARAGRAPHS			APPLICABLE MAJOR SUBSYSTEM EQUIP.	ACCEPTANCE TESTS			AVAILABILITY OF DETAILED PROCEDURES		COMPUTER *
	AT (PAR. 4) WDL-98 2043B-0M	S/S (PAR. 3) WDL-98 2043B-09	TOR # 930(2110)-2 DESIGN GUIDE		VENDOR/IN-HOUSE OPERIPHERAL EQUIPMENT)	ON-SITE OPERIPHERAL EQUIPMENT)	PHASE III TESTS (PERIPHERAL EQUIPMENT)	AT WDL-98-2031-04 OR WDL-98-2043B-09	PHASE III WDL-97-143836-01	PROGRAMMING (DIAGNOSTIC)
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
165. RASTER WIDTH	4.4.2.9.1.2	3.4.2.9.1.2	N/A	Antenna & Pedestal OA 278	X -	- N/A	X	WDL-98-2031-04 (4.5.2.9.1.2)	WDL-97-143836-01	N/A
166. RASTER HEIGHT	4.4.2.9.1.3	3.4.2.9.1.3	"	Antenna & Pedestal OA 278	X -	"	X	WDL-98-2031-04 (4.5.2.9.1.3)	WDL-97-143836-01	"
167. VERTICAL ANTENNA MOVEMENT	4.4.2.9.1.4	3.4.2.9.1.4	"	Antenna & Pedestal	X -	"	X	WDL-98-2031-04 (4.5.2.9.1.4)	WDL-97-143836-01	"
168. RASTER SCAN STOP	4.4.2.9.1.5	3.4.2.9.1.5	"	Antenna & Pedestal OA 278	X -	"	X	WDL-98-2031-04 (4.5.2.9.1.5)	WDL-97-143836-01	"
169. RASTER SCAN RESET	4.4.2.9.1.6	3.4.2.9.1.6	"	Antenna & Pedestal OA 278	X -	"	X	WDL-98-2031-04 (4.5.2.9.1.6)	WDL-97-143836-01	"
170. REMOTE OPERATION	4.4.2.9.2	3.4.2.9.2	"	N/A	N/A	"	N/A	WDL-98-2031-04 (4.5.2.9.2)	N/A	"
171. AZIMUTH	4.4.2.9.2.1	3.4.2.9.2.1	"	Antenna Pedestal OA 278	X - Synchro Test Fixture-SK19294	"	"	WDL-98-2031-04 (4.5.2.9.2.1.1)	"	"
172. ELEVATION	4.4.2.9.2.2	3.4.2.9.2.2	"	Antenna Pedestal OA 278	X - Synchro Test Fixture-SK18294	"	"	WDL-98-2031-04 (4.5.2.9.2.1.2)	"	"
173. RANGE	4.4.2.9.2.3	3.4.2.9.2.3	"	Antenna Pedestal OA 278	X - Synchro Test Fixture-SK19295	"	"	WDL-98-2031-04 (4.5.2.9.2.2)	"	"
174. ALIGNMENT & CALIBRATION SUBSYSTEM	4.4.2.10	3.4.2.10	"	N/A	N/A	"	"	WDL-98-2031-04 (4.5.2.10)	"	"
175. BORESIGHT TELESCOPE	4.4.2.10.1	3.4.2.10.1	5.1.5	N/A	"	"	"	WDL-98-2031-04 (4.5.2.10.2)	"	"
176. MAGNIFICATION	4.4.2.10.1.1	3.4.2.10.1.1	N/A	Antenna & Pedestal	X -	"	"	WDL-98-2031-04 (4.5.2.10.2.1)	"	"
177. IMAGE	4.4.2.10.1.2	3.4.2.10.1.2	"	Antenna & Pedestal assembly	X -	"	X	WDL-98-2031-04 (4.5.2.10.2.2)	WDL-97-143836-01	"
178. FOCUS	4.4.2.10.1.3	3.4.2.10.1.3	"	Antenna & Pedestal assembly	X -	"	X	WDL-98-2031-04 (4.5.2.10.2.3)	WDL-97-143836-01	"

TABLE 3-1 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM RADAR TRACKING (PRELORT)
(WDL-98-2043-B-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS: AT (PAR. 4) WDL-98-2043B-09 (B)	APPLICABLE PARAGRAPHS: S/S (PAR. 3) WDL-98-2043B-09 (C)	APPLICABLE PARAGRAPHS: TOR # 930(2110)-2 DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS: VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ACCEPTANCE TESTS: ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES: AT WDL-98-2031-04 or WDL-98-2043B-09 (I)	AVAILABILITY OF DETAILED PROCEDURES: PHASE III WDL-97-143836-01 (J)	COMPUTER PROGRAMMING (DIAGNOSTIC) (K)
179. RETICLE ILLUMINATION	4.4.2.10.1.4	3.4.2.10.1.4	N/A	Antenna & Pedestal assembly	X -	N/A	X -	WDL-98-2031-04 (4.5.2.10.2.4)	WDL-97-143836-01	N/A
180. TELESCOPE MOUNT	4.4.2.10.1.5	3.4.2.10.1.5	"	Antenna & Pedestal assembly	X -	"	X -	WDL-98-2031-04 (4.5.2.10.2.5)	WDL-97-143836-01	"
181. RESOLUTION	4.4.2.10.1.6	3.4.2.10.1.6	"	Antenna & Pedestal Assembly & Target Board	N/A	X - Target Board	N/A	N/A	N/A	"
182. BORESIGHT CAMERA & LENS ASSEMBLY	4.4.2.10.2	3.4.2.10.2	5.1.5	N/A	No A/T GFE	N/A	"	No A/T GFE	"	"
183. FILM	4.4.2.10.2.1	3.4.2.10.2.1	N/A	Radar S/S plus boresight target board	N/A	X -	N/A	No A/T GFE	"	"
184. REFLEX VIEWER OR BORESIGHT TOOL	4.4.2.10.2.2	3.4.2.10.2.2	"	N/A	No A/T GFE	N/A	"	No A/T GFE	"	"
185. DATA RECORDER	4.4.2.10.2.3	3.4.2.10.2.3	"	N/A	No A/T GFE	"	"	No A/T GFE	"	"
186. FOCUS	4.4.2.10.2.4	3.4.2.10.2.4	"	N/A	No A/T GFE	"	"	No A/T GFE	"	"
187. CALIBRATED RETICLE	4.4.2.10.2.5	3.4.2.10.2.5	"	N/A	No A/T GFE	"	"	No A/T GFE	"	"
188. RESOLUTION	4.4.2.10.2.6	3.4.2.10.2.6	"	N/A	No A/T GFE	"	"	No A/T GFE	"	"
189. REMOTE CONTROL	4.4.2.10.2.7	3.4.2.10.2.7	5.9	N/A	N/A	X -	"	No A/T GFE	"	"
190. BORESIGHT CAMERA & LENS ASSEMBLY MOUNT	4.4.2.10.2.8	3.4.2.10.2.8	N/A	N/A	No A/T GFE	N/A	"	No A/T GFE	"	"
191. RF SIGNAL GENERATOR	4.4.2.10.3	3.4.2.10.3	"	N/A	No A/T GFE	N/A	"	WDL-98-2031-04 (4.5.2.10.3)	"	"
192. TUNING RANGE	4.4.2.10.3.1	3.4.2.10.3.1	"	OA 274	X -	N/A	"	WDL-98-2031-04 (4.5.2.10.3.1)	"	"

TABLE 3-1 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM RADAR TRACKING (PRELORT)

(WDL-98-2043-B-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS A/ (PAR. 4) WDL-98-2043B-09 (B)	S/S (PAR. 3) WDL-98-2043B-09 (C)	TOR # 930(211C)-2 Design Guide (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES AT WDL-98-2031-04 or WDL-98-2043B-09 (I)	PHASE III WDL-97-143836-01 (J)	COMPUTER * PROGRAMMING (DIAGNOSTIC) (K)
193. POWER OUTPUT	4.4.2.10.3.2	3.4.2.10.3.2	N/A	OA 274	X -	N/A	N/A	WDL-98-2031-04 (4.5.2.10.3.2)	N/A	
194. FREQUENCY STABILITY	4.4.2.10.3.3	3.4.2.10.3.3	N/A	OA 274	X -	"	"	WDL-98-2031-04 (4.5.2.10.3.3)	"	
195. ACCURACY	4.4.2.10.3.4	3.4.2.10.3.4	"	OA 274	X -	"	"	WDL-98-2031-04 (4.5.2.10.3.4)	"	
196. ELECTRONIC COUNTER	4.4.2.10.4	3.4.2.10.4	"	N/A	N/A	"	"	WDL-98-2031-04 (4.5.2.10.4)	"	
197. TIME BASE	4.4.2.10.4.1	3.4.2.10.4.1	"	OA 274	X -	"	"	WDL-98-2031-04 (4.5.2.10.4.1)	"	
198. STABILITY	4.4.2.10.4.2	3.4.2.10.4.2	"	OA 274	X -	"	"	WDL-98-2031-04 (4.5.2.10.4.2)	"	
199. MINIMUM TIME MEASUREMENT	4.4.2.10.4.3	3.4.2.10.4.3	"	OA 274	X -	"	"	WDL-98-2031-04 (4.5.2.10.4.3)	"	
200. BORESIGHT TARGET BOARD	4.4.2.10.5	3.4.2.10.5	"	Target board	N/A	X -	"	N/A	"	
201. RF DISTRIBUTION CONTROL UNIT	4.4.2.10.6	3.4.2.10.6	"	OA 274	X -	X -	"	WDL-98-2248-04	"	
202. AZIMUTH, ELEVATION & RANGE DISPLAY	4.4.2.10.7	3.4.2.10.7	"	OA 278	X -	N/A	"	WDL-98-2233-04	"	

* DDLE Diagnostic Program Will Test
1. Capability of Antenna to be driven by the CDC160A. Commanding Computer via the synchro slaving link in azimuth and elevation.
2. Capability of Antenna to slave to all other antennas.
3. Capability of Antenna Ranging System to be driven by the CDC160A.
4. Capability of Antenna Ranging System to be driven by Doppler Simulator.

TABLE 3-2 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM 200 MC AUTOTRACK ANTENNA

(WDL-98-2073-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION	APPLICABLE PARAGRAPHS			APPLICABLE MAJOR SUBSYSTEM EQUIP.	ACCEPTANCE TESTS			AVAILABILITY OF DETAILED PROCEDURES		COMPUTER * PROGRAMMING (DIAGNOSTIC)
	AT (PAR. 4) WDL-98-2073-09	S/S (PAR. 3) WDL-98-2073-09	TOR # 930(2110)-4 Design Guide		VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT)	ON-SITE (PERIPHERAL EQUIPMENT)	PHASE III TESTS (PERIPHERAL EQUIPMENT)	AT WDL-98-2140-04	PHASE III WDL-97-143840-01	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
1. ANTENNA PEDESTAL LEVEL	4.3.2.1		NA	Antenna Pedestal WDL-AS-013	X - Transit	N/A	X -	4.5 1	WDL-97-143840-01 (1/21/63)	N/A
2. OPTICAL COLLINATION	4.3.2.1.1	3.2.2.4	NA	Antenna Pedestal	N/A	X - B/S Tower Optical & RF Targets	Telescope Brunsen Model 81 with Mounting Base	4 5.1.1	WDL-97-143840-01 (1/21/63)	"
3. OPTICAL-RF COLLIMATION	4.3.2.1.2		NA	Antenna Pedestal WDL-AS-013	N/A	X - Antenna Mounted Telescope	RF Boresight Target N/A	4.5.1.2	N/A	"
4. ENCODER ALIGNMENT	4.3.2.1.3	3.2.3.2.(a)	NA	--------	X -	N/A	N/A	4.5.1.3		
5. ELEVATION ENCODER	4.3.2.1.3.1	3.2.4	3.1	Pedestal, OA-270:A03	X - Clinometer	N/A	X -	4.5.1.3.1	WDL-97-143840-01 (1/21/63)	"
6. ELEVATION ENCODER ZERO	4.3.2.1.3.2	3.2.4.2(a)	NA	Pedestal, OA-270:A03	X - Telescope	N/A	Telescope Brunsen 81 Optical Boresight Targets	4.5.1.3.2	WDL-97-143840-01	"
7. AZIMUTH ENCODER	4.3.2.1.4	3.2.4	3.1	Pedestal, OA-270:A03	X - Transit	N/A	N/A	4.5.1.4	N/A	"
8. AZIMUTH ENCODER LINEARITY	4.3.2.1.4.1		NA	Pedestal, OA-270:A03	X - Transit	N/A	N/A	4.5.1.4.1	N/A	"
9. AZIMUTH ENCODER ALIGNMENT	4.3.2.1.4.2	3.2.4.2(a)	NA	Pedestal, OA-270:A03	X - Telescope & B/S Tower	N/A	Telescope #81 & Boresight Target	4.5.1.4.2	(1/21/63)	"
10. ANTENNA ANALOG POSITION READOUTS	4.3.2.1.5	3.2.2.2.5	NA	Pedestal, OA-270:A03	X - Telescope & B/S Tower	N/A	American Ephemeris & Nautical Almanac Telescope #81 Optical Boresight	4.5.1.5	WDL-97-143840-01 (1/21/63)	"
11. ANTENNA TRAVEL LIMITS	4.3.2.1.6	3.2.2.1.2 3.2.2.1.3.2	4.2.2	Pedestal, OA-270:A03	X -	N/A	Target	4.5.1.6	N/A	"
12. ANTENNA PEDESTAL WARM-UP	4.3.2.1.7	3.2.2.1.3.2a 3.2.2.2.1.a 3.2.2.2.4 3.2.3.2.c	4.3	Pedestal, OA-270:A04	X -	N/A	N/A	4.5.1.12	N/A	"

TABLE 3-2 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM 200 MC AUTOTRACK ANTENNA
(WDL-98-2073-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION	APPLICABLE PARAGRAPHS			APPLICABLE MAJOR SUBSYSTEM EQUIP.	ACCEPTANCE TESTS		PHASE III TESTS PERIPHERAL EQUIPMENT	AVAILABILITY OF DETAILED PROCEDURES		COMPUTER *
	AT WDL-98-2073-09	S/S WDL-98-2073-09	TOR # 930(2410)-4 Design Guide		VENDOR/IN-HOUSE PERIPHERAL EQUIPMENT)	ON-SITE PERIPHERAL EQUIPMENT)		AT WDL-98-2140-04	PHASE III WDL-97-143840-01	PROGRAMMING (DIAGNOSTIC)
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
13. SERVO & PEDESTAL EQUIP. STATUS INDICATORS	4.3.2.2	3.2.2.2.1.ab 3.2.2.2.2a	4.3	Pedestal, OA-270:A03, A04	X-	N/A	N/A	4.5.2.1	N/A	N/A
14. POSITION ERROR SIGNAL GRADIENT CALIBRATION	4.3.2.2.1		NA	Pedestal, AG-280:A03, A04	X-Low Pass	N/A	N/A	4.5.2.2	N/A	N/A
15. VELOCITY VOLTAGE GRADIENT CALIBRATION	4.3.2.2.2	3.2.2.1.3.2.c 3.2.2.2.1b	4.3	Pedestal, OA-270:A03, A04	X-Low Pass Filter Angular Accelerometer	N/A	N/A	4.5.2.3	N/A	N/A
16. SERVO LAGS	4.3.2.2.3	3.2.2.2.1.3.a	4.1.2.2	Pedestal, OA-270:A03, A04	X-Low Pass Filter Angular Accelerometer	N/A	N/A	4.5.2.4	N/A	N/A
17. HANDWHEEL FOLLOW-UP TESTS	4.3.2.2.4		4.3	Pedestal, OA-270:A03, A04	X-Low Pass	N/A	N/A	4.5.2.5	N/A	N/A
18. TRACKING ERROR METER CALIBRATION	4.3.2.2.5	3.2.2.2.3b	3.3 4.4.1	Pedestal, OA-270: A03, A04, OA-271	X-B/S Equip.	N/A	N/A	4.5.2.6	N/A	N/A
19. ANTENNA SLEWING RATES	4.3.2.2.6	3.2.2.1.2.2 (b & c)	4.2.2	Pedestal, OA-270: A03, A04, OA-271	X-	N/A	N/A	4.5.2.7	N/A	N/A
20. RECEIVING EQUIPMENT	4.3.2.3	3.2.2.3	4.4	OA-270	X-50 ohm PAD Noise Generator	N/A	Signal Generator Waltham	4.5.3	WDL-97-143840-01 (1/21/63)	N/A
21. PREAMPLIFIER	4.3.2.3.1	3.2.2.3.1	4.4.2b	Paramp Model WDL-AM-153		50 ohm PAD Noise Generator	107A, RF Millivoltmeter	4.5.3.1	N/A	N/A
22. NOISE FIGURE	4.3.2.3.1.1	3.2.2.3.1(a)	4.4.2b	Paramp Model WDL-AM-153	X-50 ohm PAD Noise Generator	N/A	HP411A, 50 ohm PAD HP355A	4.5.3.1.1	WDL-97-143840-01 (12/20/62)	N/A
23. BANDWIDTH & GAIN	4.3.2.3.1.2	3.2.2.3.1b,c	4.4.2b	Paramp Model WDL-AM-153	X-50 ohm PAD	N/A	(2 ea.), Counter HP524L	4.5.3.1.2	N/A,	N/A

TABLE 3-2 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM 200 MC AUTOTRACK ANTENNA

(WDL-98-2073-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS: AT (PAR. 4) WDL-98-2073-09 (B)	APPLICABLE PARAGRAPHS: S/S (PAR. 3) WDL-98-2073-09 (C)	APPLICABLE PARAGRAPHS: TOR # 930(2110)-4 DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS: VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ACCEPTANCE TESTS: ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES: AT WDL-98-2140-04 (I)	AVAILABILITY OF DETAILED PROCEDURES: PHASE III WDL-97-143840-01 (J)	COMPUTER * PROGRAMMING (DIAGNOSTIC) (K)
24. BANDWIDTH	4.3.2.3.1.-2.1	3.2.2.3.1 (a)	4.4.2b	Paramp Model WDL-AM-153	X - 50 ohm PAD	N/A	AIL Precision Test Receiver Model 132	4.5.3.1.2.1	N/A	N/A
25. GAIN	4.3.2.3.1.-2.2	3.2.2.3.1 (b)	4.4.2b	Paramp Model WDL-AM-153	X - 50 ohm PAD	"	AIL IF Amplifier Model 13131	4.5.3.1.2.2	"	"
26. SUM CHANNEL OUTPUT SIGNAL	4.3.2.3.1.3	3.2.2.3 (a) 3.2.2.3.1d	4.4.1	Paramp Model WDL-AM-153	X - 50 ohm PAD WDL-AM-153	"	AIL Noise Generator 07005	4.5.3.1.3	WDL-97-143840-01 (1/21/63)	"
27. CHANNEL ISOLATION	4.3.2.3.1.4	3.2.2.3.1(c)	4.4.2b	Paramp Model	X - 50 ohm PAD	"	N/A	4.5.3.1.4	N/A	"
28. TRACKING RECEIVER	4.3.2.3.2	3.2.2.3.2	4.4.2c	OA-271	X -	"	"	4.5.3.2	N/A	"
29. BANDWIDTH	4.3.2.3.2.1	3.2.2.3.2(a)	4.4.2c	OA-271	X -	"	"	4.5.3.2.1	N/A	"
30. AUTOMATIC ACQUISITION BANDWIDTH	4.3.2.3.2.2	3.2.2.3.2(a)	4.4.2c	OA-271	X -	"	"	4.5.3.2.3	N/A	"
31. DYNAMIC RANGE	4.3.2.3.2.3	3.2.2.3.2b	4.4.2c	OA-271 plus RF Converter	X - 50 ohm PAD	"	"	4.5.3.2.4	N/A	"
32. IMAGE REJECTION	4.3.2.3.2.4	3.2.2.3.2c	4.4.2c	RF Converter Model WDL-CV-114	X - 50 ohm PAD	"	Telescope #81 Boresight Tower & Optical Target	4.5.3.2.5	N/A	"
33. TRACKING PERFORMANCE	4.3.2.3.2.5	3.2.2.3b 3.2.2.3.2f 3.2.2.4 3.2.2.4.1	3.0 NA 4.2.3 4.2.3	Entire Subsystem	X - B/S Equip. Antenna Comparator RF Converter	"	Oscillator HPC-99-650 AR.	4.5.3.2.6	WDL-97-143840-01 (1/21/63)	"
34. STABILITY	4.3.2.3.6	3.2.2.3(c)	NA	Entire Subsystem	X - RF Converter	"	Square Wave Generator HP799-21LAR	4.5.3.2.7	N/A	"
35. RECEIVER CONTROLS & INDICATORS	4.3.2.3.7	3.2.2.3.2(a) 3.2.2.2.3	4.4.2c 3.3.4.4.1a 4.4.1b 4.4.1c	OA-270:AO3	X -	"	Signal Generator Waltham 107A RF Millivoltmeter HP411A	4.5.3.2.8	N/A	"

TABLE 3-2- MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM 200 MC AUTOTRACK ANTENNA

(WDL-98-2073-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION	APPLICABLE PARAGRAPHS			APPLICABLE MAJOR SUBSYSTEM EQUIP.	ACCEPTANCE TESTS		PHASE III TESTS (PERIPHERAL EQUIPMENT)	AVAILABILITY OF DETAILED PROCEDURES		COMPUTER * PROGRAMMING (DIAGNOSTIC)
	AT (PAR. 4) WDL-98-2073-09	S/S (PAR. 3) WDL-98-2073-09	TOR # 930(2110)-4 DESIGN GUIDE		VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT)	ON-SITE (PERIPHERAL EQUIPMENT)		AT WDL-98-2140-04	PHASE III WDL-97-143840-01	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
36. FLY-BY TEST	4.3.2.4	3.2.2.1.3.2-(b) 3.2.2.2.1(c) 3.2.2.2.1(c) 3.2.2.1.3.1(a) 3.2.2.1.2.2 (a & c) 3.2.2.1 3.2.1.1 3.2.1	4.3 4.3 4.3 4.1.2.2 4.2.2 4.2.1 4.1.2.1	Entire Subsystem	X -	N/A	N/A	4.5.4	N/A	N/A

* DDLE Diagnostic Program will test

1. Capability of Antenna to be driven by the CDC160A in Azimuth and Elevation.
2. Capability of Antenna to slave to all other Antennas.

TABLE 3-3 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM FM/CW TELEMETRY GROUND STATION

(WDL-98-2045C-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS AT (PAR. 4) WDL-98-2045C-09 (B)	S/S (PAR. 3) WDL-98-2045C-09 (C)	TOR # 930(2110)-1 APPENDIX-B DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT)on (H)	AVAILABILITY OF DETAILED PROCEDURES AT WDL-98------04 OR 09 (I)	PHASE III WDL-97-143861-01 (J)	COMPUTER * PROGRAMMING (DIAGNOSTIC) (K)
1. MAGENTIC TAPE RECONDER GROUP	4.5.3.1.1	N/A	N/A	N/A	N/A	N/A	Counter, HP-524C VTVM, HP-400H (2 ea.) Oscilloscope HP-535 (2 ea.) Oscilloscope Plug-In, Type CA (HP) Oscilloscope X10 Probe	WDL-97-143861-01 (4.5.3.1.1) (See Note #7) WDL-98-2045C-09 (4.5.3.1.1.1) (See Note #7) WDL-98-2045C-09 (4.5.3.1.1.2) (See Note #7) WDL-98-2045C-09 (4.5.3.1.1.3) (See Note #7)	WDL-97-143861-01 WDL-97-143861-01 WDL-97-143861-01 WDL-97-143861-01	N/A
2. GENERAL OPERATION	4.5.3.1.1.1	3.4.2	3.6	OA2346OA235	X-	"				
3. SPEED STABILITY	4.5.3.1.1.2	3.4.2	3.6.1	OA241,OA234,OA235	X-Programmed Patch Board (G)	"				
4. FREQUENCY RESPONSE	4.5.3.1.1.3	3.4.2	3.6.2	OA241,OA234,OA235	X-					
5. OPTICAL OSCILLOGRAPH RECORDER GROUP	4.5.3.1.2	N/A	N/A	N/A	N/A	"	N/A	WDL-98-2045C-09 (4.5.3.1.2) (See Note #7)	N/A	
6. ALIGNMENT	4.5.3.1.2.1	3.4.5.1	3.7.1.7	OA241,OA239,OA243 OA245	X-Program Patch Board (A)	"	X	WDL-98-2045C-09 (4.5.3.1.2.1) (See Note #7)	WDL-97-143861-01	
7. FREQUENCY RESPONSE	4.5.3.1.2.2	3.4.5.1 3.4.5.2	3.7.1.7	OA241,OA239,OA243 OA240	X-Program Patch Board (B) Program Patch Board (G)	"	X	WDL-98-2045C-09 (4.5.3.1.2.2) (See Note #7)	N/A	
8. VHF GROUP	4.5.3.2	N/A	N/A	N/A	N/A	"	Noise Scource, HP-343A Noise Figure Meter, HP-340B VTM-HP-400H HP-200-CD Oscilloscope HP-531 Oscilloscope Plug-In Unit Type L (HP)	WDL-98-2045C-09 (4.5.3.2) (See Note 1) WDL-98-2045C-09 (4.5.3.2.1) (See Note #1) WDL-98-2045C-09 (See Note #1) (4.5.3.2.2) WDL-98-2045C-09 (4.5.3.2.3) (See Note #1)	N/A WDL-97-143861-01 WDL-97-143861-01 WDL-97-143861-01	
9. NOISE FIGURE	4.5.3.2.1	3.4.1	3.2	OA236,OA237,OA238	X-	"				
10. RECEIVER SENSITIVITY	4.5.3.2.3	3.4.1	3.2.3.3	OA236,OA237,OA238 OA241	X-	"				
11. 5 MC INPUT TO RECEIVERS	4.5.3.2.3	3.4.1	3.2.3.3	OA 236, OA237, OA 238, OA 241	X-	"				

PHILCO

TABLE 3-9 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM FM/FM TELEMETRY GROUND STATION

(WDL-98-2045C-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS			APPLICABLE MAJOR SUBSYSTEM EQUIP.	ACCEPTANCE TESTS			AVAILABILITY OF DETAILED PROCEDURES		COMPUTER* PROGRAMMING (DIAGNOSTIC)
	AT (PAR. 4) WDL-98-2045C-09 (B)	S/S (PAR. 3) WDL-98-2045C-09 (C)	TOR # 930(2110)-1 APPENDIX-B DESIGN GUIDE (D)	(E)	VENDOR/IN-HOUSE PERIPHERAL EQUIPMENT) (F)	ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AT WDL-98-----04 OR - 09 (I)	PHASE III WDL-97-143861-01 (J)	(K)
12. SUBCARRIER DISCRIMINATOR GROUP	4.5.3.3	N/A	N/A	N/A	N/A	N/A	N/A	WDL-98-2045C-09 (4.5.3.3) (See Note #7)	N/A	N/A
13. SPECIAL IRIG CHANNELS CENTER FREQUENCY AND BANDEDGE ADJUSTMENTS	4.5.3.3.2	3.4.3	3.4	OA239, OA243, OA232, DA244, DA246	X- Program Patch Board (F)	"	X	WDL-98-2045C-09 (4.5.3.3.2) (See Note #7)	WDL-97-143861-01	"
14. STANDARD IRIG CENTER FREQUENCY AND BANDEDGE ADJUSTMENT	4.5.3.3.3	3.4.3	3.4	Same as Above	X- Program Patch Board (F)	"	X	WDL-98-2045C-09 (4.5.3.3.3) (See Note #7)	WDL-97-14861-01	"
15. BAND SELECT DISCRIMINATOR CENTER FREQUENCY	4.5.3.3.4	3.4.3	3.4	OA239, OA243, OA245, OA242, OA244, OA246	X- Program Patch Board (F)	"	X	WDL-98-2045C-09 (4.5.3.3.4) (See Note #7)	WDL-97-143861-01	"
16. SUBCARRIER DISCRIMINATOR OPERATIONAL PERFORMANCE	4.5.3.3.6	3.4.3	3.4	Same as #15	X-	"	X	WDL-98-2045C-09 (4.5.3.3.5) (See Note #7)	WDL 97-143861-01	"
17. SUBCARRIER DISCRIMINATOR TAPE SPEED COMPENSATION	4.5.3.3.6	3.4.3	3.4	Same as #15	X-	"	X	WDL-98 2045C-09 (4.5.3.3.6) (See Note #7)	WDL-97-143861-01	"
18. DECOMMUTATOR GROUP OPERATIONAL CHECK	4.5.3.4	3.4.4	3.5	OA241, OA248, OA249, OA242, OA243, OA239, OA240	X-Program Patch B Board (C)	"	X	WDL-98-2045C 09 (4.5.3.4) (See Note #7)	WDL-97-143861-01	
19. COMMAND VERIFICATION DETECTOR AND INDICATOR GROUP OPERATION	4.5.3.5	3.4.5.8	N/A	Same as #18	X-Program Patch Board (E)	"	Signal Generator HP-202A (2) VTVM HP-400H (2)	WDL-98-2045C-09 (4.5.3.5) (See Note #1)	WDL-97-143861-01	

TABLE 3-3 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM FM/FM TELEMETRY GROUND STATION

(WDL-98-2045C-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS: AT (PAR. 4) WDL-98-2045C-09 (B)	S/S (PAR. 3) WDL-98-2045C-09 (C)	TCR # 930(2110)-1 APPENDIX-B DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS: VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES: AT WDL-98----04 or 09 (I)	PHASE III WDL-97-143861-01 (J)	COMPUTER * PROGRAMMING (DIAGNOSTIC) (K)
20. SUBSYSTEM PERFORMANCE	4.5.4	N/A	4.0	Complete Subsystem	N/A	N/A	50-OHM Matched T Microlab DB3FM	WDL-98-2045C-09 (4.5.4) (See Note #1)	N/A	N/A
21. SETUP	4.5.4.1	3.4	N/A	N/A	X -	"	X -	WDL-98-2045C-09 (4.5.4.1) (See Note #1)	WDL-97-143861-01	"
22. REAL TIME OPERATION	4.5.4.2	3.4	4.0	"	X - Program Patch Board (H)	"	X -	WDL-98-2045C-09 (4.5.4.2) (See Note #1)	WDL-97-143861-01	
23. PLAYBACK	4.5.4.3	3.4	N/A	"	X - Program Patch Board (I)	"	X -	WDL-98-2045C-09 (4.5.4.3) (See Note #1)	WDL-97-143861-01	"
24. EVALUATION OF RECORDS	4.5.4.4	3.4	5.2 & 5.4	"	X -	"	X -	WDL-98-2045C-09 (4.5.4.4) (See Note #1)	WDL-97-143861-01	"

* FM/FM Telemetry Diagnostic Program will test the Decommutators and parts of telemetry data processor by use of the Commutator Simulator

TABLE 3-4- MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM DATA HANDLING

(WDL-98-20468-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATIONS (A)	APPLICABLE PARAGRAPHS AT (PAR. 4) WDL-98-20468-09 (B)	S/S (PAR. 3) WDL-98-20468-09 (C)	TOR # 169(3110)-3 Design Guide (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS VENDOR/IN-HOUSE PERIPHERAL EQUIPMENT (F)	ON-SITE PERIPHERAL EQUIPMENT (G)	PHASE III TESTS PERIPHERAL EQUIPMENT (H)	AVAILABILITY OF DETAILED PROCEDURES AT WDL-98------- -04 OR 09 (I)	PHASE III WDL-97-143850-01 (J)	COMPUTER * PROGRAMMING (DIAGNOSTIC) (K)
1. COMPUTER INTERFACE	4.3.2.1	N/A	N/A	N/A	N/A	N/A	X	WDL-98-20468-09 (4.3.2.1) (See Note 3)	WDL-97-143850-01	160A Computer and Peripheral Equip. Diagnostic
2. IOB INTERFACE	4.3.2.1.1	3.2.2.3	4.4 4.6 4.8	CDC-160A OA 281-000 Synchro Data Link Equip.	Axial Indicator VTCW Simulator STCW Simulator SOC Synchro Displays	N/A	Timing Subsystem	WDL-98-20468-09 (4.3.2.1.1) (See Note #1)	WDL-97-143850-01	IOB Diagnostic
3. TDP INTERFACE	4.3.2.1.2	3.2.2.5	3.1 4.4	CDC-160A OA-275-000	STCW Simulator Output Simulator Input Simulator	N/A N/A	Timing Subsystem	WDL-98-20468-09 (4.3.2.1.2) (See Note #1)	WDL-97-143850-01	TDP Diagnostic
4. CCC INTERFACE	4.3.2.1.3	3.2.2.2	4.4	CDC-160A Converter, Computer Communications		N/A	N/A	WDL-98-20468-09 (4.3.2.1.3) (See Note #1)	N/A	CCC Diagnostic
5. TELEMETRY PROCESSING	4.3.2	N/A	N/A	N/A	N/A	N/A	N/A	WDL Test Procedure 695-229 (See Note #6)	N/A	TDP Diagnostic
6. GP-1 MODE	4.3.2.2.1	3.2.2.5	3.1 4.4	CDC-160A OA-275-000	GP-1 Simulator Pulse Generator	N/A	N/A	695-229 (See Note #6)	N/A	TDP Diagnostic
7. PCM MODE	4.3.2.2.2	3.2.2.5	3.1 4.4	CDC-160A OA- 275-000	PCM Simulator	N/A	N/A	695-229 (See Note #6)		TDP Diagnostic
8. FM/FM MODE	4.3.2.2.3	3.2.2.5	3.1 4.4	CDC-160A OA-275-000	FM/FM Simulator Pulse Generator	N/A	X	695-229 (See Note #6)		TDP Diagnostic
9. DIGITAL DATA LINK INTERFACE	4.3.2.3	3.2.2.7	4.2	CDC-160A OA 282-000 OA 290-000 OA 286	Timing Simulator RDT Input Simulator	N/A	Timing Subsystem	WDL-98-20468-09 (See Note #1)	WDL-97-143850-01	DDLE Diagnostic

TABLE 3-4 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM _____ DATA HANDLING _____

(WDL-98-2048-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATIONS	APPLICABLE PARAGRAPHS			APPLICABLE MAJOR SUBSYSTEM EQUIP.	ACCEPTANCE TESTS		PHASE III TESTS (PERIPHERAL EQUIPMENT)	AVAILABILITY OF DETAILED PROCEDURES		COMPUTER PROGRAMMING (DIAGNOSTIC) *
	AT (PAR. 4) WDL-98-2048-09	S/S (PAR. 3) WDL-98-2048-09	TOR 169(3110)-3 Design Guide		VENDOR/IN-HOUSE PERIPHERAL EQUIPMENT	ON-SITE PERIPHERAL EQUIPMENT		AT WDL-98-...-04 OR - 09	PHASE III WDL-97-143850-01	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
10. COMMAND	4.3.2.4	N/A	N/A	N/A	N/A	N/A	N/A	(See Note #3)	WDL-97-143850-01	CLE Diagnostic
11. ANALOG COMMANDING	4.3.2.4.1	3.2.2.4.1	4.3.1	CDC-160A OA281-000	Pen Recorder CLE Test Panel Simulation	"	CLE Test Panel	(See Note #3)	WDL-97-143850-01	CLE Diagnostic
12. DIGITAL COMMANDING	4.3.2.4.2	3.2.2.4.2	4.3.2 4.3.5	CDC-160A OA281-000	Pen Recorder CLE Test Panel Simulation	"	CLE Test Panel	(See Note #3)	WDL-97-143850-01	CLE Diagnostic
13. COMMUNICATIONS LINE	4.3.2.5	N/A	N/A	N/A	N/A	N/A	N/A	Vendor (ACF) Acceptance Test	WDL-97-143850-01	N/A
14. CCC SELF TEST MODE	4.3.2.5.1	3.2.2.2	4.4	CDC-160A Converter, Computer Communications	"	Two Cable Connectors Amphenol Type 67-02E18-245	Amphenol Type 67-02E18-245	Vendor (ACF) Acceptance Test	WDL-97-143850-01	CCC Diagnostic
15. CROSS CONNECT PANEL INTERFACE	4.3.2.6	3.2.2.6	3.1	CDC-160A OA 275-000 OA 276-000 OA 277-000 OA 281-000 Converter, Computer Communications	SPB Simulator	N/A	N/A	WDL-98-2048B-09 (4.3.2.6) (See Note #1)	WDL-97-143850-01	N/A

TABLE 3-5 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM CONTROL AND DISPLAY

(WDL-98-2048A-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS: AT (PAR. 4) WDL 98-2048A-09 (B)	APPLICABLE PARAGRAPHS: S/S (PAR. 4) WDL 98-2048A-09 (C)	APPLICABLE PARAGRAPHS: TOR # 930(2110)-5 DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS: VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ACCEPTANCE TESTS: ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PROCEDURES: AT WDL-98----04 or 09 (I)	AVAILABILITY OF DETAILED PROCEDURES: PHASE III WDL-97-143845-01 (J)	COMPUTER * PROGRAMMING (DIAGNOSTIC) (K)
1. LAMP	4.3.2.2	3.2.2.1.4	3.2.2 3.3.3.1	Station Operator Console, OA-176	X	N/A	X	WDL-98-2120-04 (4.5.3.1)	WDL-97-143845-01	"
2. INDICATOR & SWITCH CIRCUIT	4.3.2.2.2	3.2.2.1.5.1 3.2.2.1.6.1 3.2.2.1.6.2	4.0	OA-176	X	N/A	N/A	WDL-98-2120-04 (4.5.2)	N/A	"
3. METER & SYNCHRO DISPLAY	4.3.2.2.3	3.2.2.1.5.3 3.2.2.1.5.4 3.2.2.1.5.5	4.0	OA-176	X	N/A	N/A	WDL-98-2120-04 (4.5.2)	N/A	"
4. CONTINUITY & SWITCH CIRCUIT	4.3.2.3.1	3.2.2.3.1 3.2.2.3.2	N/A	OA-176	X	N/A	N/A	WDL-98-2114-04 (4.5.1)	N/A	"
5. IOB & CLE INTERLOCK SWITCH	4.3.2.3.2		3.8	Station program board, Model WDL-JD-142	X	N/A	X	WDL-98-2114-04 (4.5.2)	WDL-97-143845-01	"
6. DIRECTING SOURCE CONTROL	4.3.2.3.3	3.2.2.2.3 3.2.2.3.1 k 3.2.2.3.2 k	3.2.1	SPB (Above) SOC	X	N/A	28 Volt Power Supply (Armour T225-8)	WDL-98-114-04 (4.5.1) and WDL-98-2120-04 (4.5.3)	WDL-97-143845-01	" "
7. SPB TO SOC CABLING	4.3.2.3.4		N/A	SPB, SOC	N/A	X	N/A	Cabling not Provided	N/A	
8. COPPER UNBALANCE	4.3.2.4.1	3.2.2.2	N/A	Synchro Data Link Equipment SPB	N/A	N/A	Resistive Bridge (RS1-250DA)	WDL-98-2129-04 (4.5.1)	WDL-97-143845-01	"
9. SYNCHRO LINK LOOP ERROR	4.3.2.4.2	3.2.2.2	N/A	SDLE	11	N/A	X	(See Note #2)	WDL-97-143845-01	"
10. ANTENNA AS A DIRECTING SOURCE	4.3.2.4.2.1	3.2.2.2 3.2.2.2.1 3.2.2.2.2	3.2.1.2	SDLE, SPB, SOC	11	N/A	Control Transformers (Bendix AT-2401C-10-D2) (Bendix AT-2401C-9-D3) Isolation Transformer (LJF-D8306)	(See Note #2)	WDL-97-143845-01	"

TABLE 5-5 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM CONTROL AND DISPLAY
(WDL-98-2048A-09)

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION (A)	APPLICABLE PARAGRAPHS: AT (PAR. 4) WDL-98-2048A-09 (B)	APPLICABLE PARAGRAPHS: S/S (PAR. 3) WDL-98-2048A-09 (C)	APPLICABLE PARAGRAPHS: TOR # 930(2110)-5 DESIGN GUIDE (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP. (E)	ACCEPTANCE TESTS: VENDOR/IN-HOUSE PERIPHERAL EQUIPMENT) (F)	ACCEPTANCE TESTS: ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TEST (PERIPHERAL EQUIPMENT) (H)	AVAILABILITY OF DETAILED PRO-CEDURES: AT WDL-98--04 or 09 (I)	AVAILABILITY OF DETAILED PRO-CEDURES: PHASE III WDL-97-143845-01 (J)	COMPUTER* PROGRAMMING (DIAGNOSTIC) (K)
11. ANTENNA AS A SLAVE	4.3.2.4.2.2	3.2.2.2 3.2.2.2.1 3.2.2.2.2	3.3.1.2	SDLE, SPB, SOC	N/A	N/A	Control Transformer (Bendix AY-2401C-10-D2 (Bendix AY-2401C-9-D3) Isolation Transformer: (LJP-DS306)	(See Note #2)	WDL-97-143845-01	N/A
12. TOTAL SYNCHRO LOOP ERROR BETWEEN ANTENNAS	4.3.2.4.2.3	3.2.2.2	N/A	Calculation	N/A	N/A	Control Transformers (Bendix AY-2401C-10-D2) (Bendix AY-2401C-9-D3) Isolation Transformer: LJP-DS306)	(See Note #2)	WDL-97-143845-01	N/A
13. ACQUISITION SERVO INPUT	4.3.2.4.3	3.2.2.2.3	3.3.1.2	SPB, SOC	N/A	N/A	Control Transformers: (Bendix AY-2401C-10-D2) (Bendix AY-2401C-9-D3) Isolation Transformer: (LJP-DS306)	WDL-98-20468-09 (See Note #1)	WDL-97-143845-01	N/A
14. 3.2 AXIS CONVERTER	4.3.2.4.4	3.2.2.2.1	3.2.1	SDLE, SPB, SOC	N/A	N/A	Control Transformer (Bendix AY-2401C-10-D2) Bendix AY-2401C-9-D3) Isolation Transformer: LJP-DS306)	WDL-98-2129-04 (4.5.2	WDL-97-143845-01	

* IOB/SOC diagnostic is provided to test
1. ETA/ETT
2. Current/next vehicle
3. Az., el, range indicators
4. Display and switch round robin
5. Command number select and transmit

TABLE 3-6 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM _____ TIMING _____

MAJOR FUNCTIONS OF	APPLICABLE PARAGRAPHS			APPLICABLE MAJOR	ACCEPTANCE TESTS			AVAILABILITY OF DETAILED PROCEDURE		COMPUTER *
SUBSYSTEM SPECIFICATION (A)	AT (PAR. 4) WDL-9s-2047A-09 (B)	S/S (PAR. 3) WDL-9s-2047A-09 (C)	TOR # 930(2110)-1 DESIGN GUIDE (D)	SUBSYSTEM EQUIP. (E)	VENDOR/IN-HOUSE (PERIPHERAL EQUIPMENT) (F)	ON-SITE (PERIPHERAL EQUIPMENT) (G)	PHASE III TESTS (PERIPHERAL EQUIPMENT) (H)	AT WDL-9s----04 or 09 (I)	PHASE III WDL-97-143855-01 (J)	PROGRAMMING (DIAGNOSTIC) (K)
1. TIME DISPLAY GENERATOR	4.3.2.2	3.3.2.1	4.2.3	CA 285-A05,	Timing Test Unit	N/A	WS-117L or 622A Timing Generator	WDL-9s-2047A-09 (4.3.2.2) (See Note #5)	WDL-97-143855-01	N/A
2. TIME DISPLAY UNIT	4.3.2.3	3.3.2.3	4.2.3	TDU, Model WDL-ID-157, 9 or 10 ea TDD, Model WDL-CV-116, 3 or 4 ea TDC (listed above)	Timing Test Unit	"	WS-117L or 622A Timing Generator	WDL-98-2047A-09 (4.3.2.3) (See Note #5)	WDL-97-143855-01	N/A
3. TIMING TERMINAL UNIT	4.3.2.4	3.3.2.4	4.2.3	TDC (listed above) TTU, Model WDL-TD-104, 3 ea	Timing Test Unit	"	WS-117L or 622A Timing Generator	WDL-9s-2047A-09 (4.3.2.4) (See Note #5)	WDL-97-143855-01	N/A
4. SYSTEM DELAY TEST	4.3.2.5	3.3.1.3	4.2.2	TTU, TDC	Timing Test Unit	"	N/A	WDL-98-2047A-09 (4.3.2.5) (See Note # 5)	N/A	N/A
5. TIME CONVERTER TEST	4.3.2.6	3.3.2.5	Not Discussed	CA 277			N/A	WDL-98-2047A-09 (4.3.2.6) (See Note #5)	N/A	N/A
					NOTE: In addition to the above Test Unit provided by WDL Test Dept., interconnecting cables and dummy loads shall be provided.	"	N/A	N/A	N/A	N/A

* The System Time Code Word Diagnostic Program will test the STCW in each 2nd GPS for proper increment.

TABLE 3-2 MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM TTS COMMUNICATION GROUND STATION

MAJOR FUNCTIONS OF SUBSYSTEM SPECIFICATION WDL-98-2079 09 (A)	APPLICABLE PARAGRAPHS AT (PAR. 4) (B)	S/S (PAR. 3) (C)	COMMUNICATIONS REQUIREMENTS PLAN, SECTION II (D)	APPLICABLE MAJOR SUBSYSTEM EQUIP.	ACCEPTANCE TESTS VENDOR/IN-HOUSE PERIPHERAL EQUIPMENT (F)	ON-SITE PERIPHERAL EQUIPMENT (G)	PHASE III TESTS PERIPHERAL EQUIPMENT (H)	AVAILIBILITY OF DETAILED PROCEDURES ACCEPTANCE TEST WDL-98- -04 OR -09 (I)	PHASE III WDL-98-143842-01 (J)	COMPUTER PROGRAMMING (K)
1. PUBLIC ADDRESS NETWORK	4.4.1	3.2	B-2	104-03/05	N/A	N/A	WECO responsibility Western Elect. Co. Sec. II 5.0 (Conducted by WECO witnessed by Philco)	WDL-SC-1292	N/A	N/A
2. VOICE COMMUNICATIONS	4.4.2	3.3			N/A	N/A		WDL-97-143842-01	N/A	N/A
a. ADMIN. TELEPHONE SERVICE	4.4.2.1	3.3.1	B-1	Served from base	N/A		GFE	N/A	N/A	
b. OPERATIONAL VOICE COMMUNICATIONS SYSTEM	4.4.2.2 4.4.2.3 4.4.2.4	3.3.2	B-3	104-03/04			Load Simulators para. 4.4.2 (see Note #1)	WDL-98-2079-09 para. 4.4.2 (see Note #1)		
c. LONG LINES TERMINATION EQUIPMENT	4.4.3	3.3.3	A-1	104-07/08			Test not supplied	WDL-98-2079-09 para. 4.4.3 (see Note #1)	N/A	
3. OTHER COMMUNICATIONS		3.4			N/A	N/A	N/A (except the following)			N/A (except the following)
a. DATA TERMINAL	4.4.4	3.4.1	A-3	101-39			Data Handling subsystem	WDL-98-2046-09 (see Note #1)	WDL-97-143842-01	Accomplished in WDL-97-143850-01
b. TELETYPE	-------	3.4.2	A-2	101-02/03			Not required (equipment existing)	N/A	N/A	
c. AIR/GROUND	-------	3.4.3	B-5	104-01/02			Not required (equipment existing)	WDL-SC-1292 Sec. III 5.0		
d. VOICE RECORDING	4.4.5	3.4.4	B-4	104-06			WECO responsibility	N/A	N/A	

* Since the equipment acceptance testing at TGS will be performed by Western Electric Co. no table will be supplied for TGS.

TABLE 3-8 - MAJOR FUNCTIONS TO BE TESTED

SUBSYSTEM CHECKOUT SUBSYSTEM
(WDL-98-2049A-09)

TO BE SUBMITTED AFTER REVISED SUBSYSTEM SPECIFICATIONS HAVE BEEN APPROVED

DISTRIBUTION LIST

Address	No. of Copies
ASTIA Arlington Hall Station Arlington 12, Virginia	10
Commander Space Systems Division Air Force Systems Command Air Force Unit Post Office Los Angeles, California Attn: Technical Data Center	10
6594th Aerospace Test Wing Satellite Test Center P. O. Box 504 Sunnyvale, California Attn: TWRD Attn: TWZ	8 2
Philco Station Manager Fort Greely Tracking Station Delta Junction, Alaska Attn: R. Walker	1
Philco Station Manager Thule Tracking Station Thule Air Base APO 23 New York, N. Y. Attn: L. Loofbourow	1
Philco Station Manager New Hampshire Station P. O. Box 311 Amherst, N. H. Attn: J. H. Moore	1
Philco Corporation Western Development Laboratories Palo Alto, California	85 + 1 reproducible
	118 + 1 reproducible

UNCLASSIFIED